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Royal Sanitary Institute Congress

PROCEEDINGS OF THE SECTION OF VETERINARY HYGIENE

We reproduce from the October, 1936, number of the *Journal of the Royal Sanitary Institute* [Vol. lvii.—No. 4] by permission of the Institute, the Presidential address and papers presented to the Section of Veterinary Hygiene of the 1936 Health Congress held at Southport in July.

This Section met on Thursday and Friday, July 9th and 10th, under the Presidentship of Mr. T. Eaton Jones. On the first day, when 190 delegates and members were present, a discussion took place on "Abattoirs and Meat Inspection," and on the second day there was a discussion on "The Accredited Milk Scheme in Operation," which was attended by about 270 delegates and members.

Presidential Address

T. EATON JONES, F.R.C.V.S.
FORMERLY CHIEF VETERINARY OFFICER, LIVERPOOL

Your President was to have been Mr. Noel Pillers, who, in 1932, succeeded me as chief veterinary officer of the City of Liverpool. His tragic death in April of this year has left many gaps, but his memory will live in the work he did and the writings he published. It was a very graceful gesture to invite me, his predecessor in office, to take his place here. Although it is now some four years since I retired from public health practice, so long as I live I shall continue to watch with interest the movements of the profession, and particularly in the world of public health.

The Royal Sanitary Institute provides annually a common meeting ground for workers in all fields of public health, for interchange of views by men and women of widely divergent interests, but all bound together in the search for human welfare. There are no clearly definable boundaries. The central focus is true preventive medicine directed against zymotic diseases as causes of morbidity and mortality, but radiating from this centre are all the activities aiming at the creation of health and the prevention of disease. All social service which contributes to the health of mankind comes within the circle. The arbitrary division of the Congress into its several sections and conferences is necessary to confine the discussion within manageable channels, but is in no sense a complete classification.

The veterinary section has been a feature for many years, and has thoroughly justified its recognition as a separate unit within the whole. The profession is only represented here, however, by reason of the relationship which exists between the health of animals and human health. The primary interest of the veterinary surgeon is the welfare of animals for their own sake and as an economic factor in the service of man, and by far the greater proportion of the veterinary surgeon's activities are outside the scope of what is commonly regarded as public health. It is well to remember that while a large body of the profession devotes its time almost entirely to the supervision of animal products intended for the food of man, it is not truly representative of the profession as a whole. Purely veterinary preventive medicine with its ancillary activities is gradually but surely coming into its own, and some day will rival the services now devoted to considerations of human health. As one who has no longer a personal stake in veterinary practice, I may be permitted to comment freely on the changes which have taken place during my own time.

It seems only a few years since the horse was regarded as the only animal requiring and justifying veterinary attention, when the practitioner travelled to see his patients on horseback or in a trap. Glanders was prevalent and it is a fair comment that this disease was tackled and eradicated because of its economic importance and not because it was communicable to man. With the advent of the motor, the horse became much less generally important, and the greater speed of transport accelerated the marketing of all livestock and their products, and in consequence disease conditions came more prominently to notice. It was realised that with the small farm animals and domestic pets, illnesses could not just be regarded as inevitable visitations from on high, or rather from below, that many were amenable to treatment, that some could be prevented, and that veterinary surgeons were not only horse doctors. I have watched the scope of professional activities widening for many years now. From the time when the Government rejected veterinary advice about cattle plague and the country suffered a disaster in consequence, the veterinary surgeon has always had to fight for recognition of his qualities. He is

now nearly as far removed from his ancient prototype, the farrier, as a modern doctor from a barber-surgeon. In public health circles the advent of the veterinary profession has frequently been regarded as an intrusion, but I am confident that that phase is passing rapidly.

The most prominent change of recent years has been the development of county services in connection with the milk supply. The Milk Marketing Board called fresh attention to the need for trained supervision of herds, and during the last few years the number of new appointments made has been great. As a result, there has naturally been a period of great difficulty within the profession itself, and the old question of whole-time or part-time administration was renewed in acute form. The detached observer can see that the eventual development is inevitable, and while it may be postponed for a short time, cannot really be combated. So soon as the volume of work to be done becomes notable, whole-time administration is essential to economy and efficiency, and any practitioner who resists it is working for his own ends rather than for his profession and his country. But, given a superviser trained and able to understand the problems of administration, strong enough to exercise his supervisory powers without fear or favour, I see no reason why a large amount of the clinical work could not be done by general practitioners. Moreover, the present movement is only a beginning, as forecast in the Gowland Hopkins Report, and unless private practice in country districts is to become uneconomic, the services of the general practitioner will before long be required. It is sincerely to be hoped, therefore, that the recent formal expression by the Practitioners' Society of willingness to work under whole-time supervision will not be interpreted as an expression of weakness, but accepted generously. I am proud to think, however, that the City of Liverpool, which I served so long, has employed veterinary surgeons whole-time for over 70 years, and was one of the first to institute routine examination of cattle, now becoming universal.

At the present time, cattle and tuberculosis occupy the stage almost to the exclusion of everything else. Admitting their importance, particularly in regard to human health, one may wonder whether some of the time, energy and money could not very profitably be expended on other purposes. Sheep scab is eradicable and would repay a special effort to that end. Swine fever still renders the purchase of stores in a market a risky procedure, and its advent in a piggery often spells disaster. Distemper in dogs takes a fearful toll in towns. Instances of preventable diseases, against which little or no effort is now exercised, could be multiplied, but this is not the place nor the time to do more than call attention to the unbalanced use of veterinary officers. One could criticise, too, the neglect to utilise the training of veterinary surgeons in such things as the housing of animals and nutritional problems. These, however, are matters for the whole profession, not only for that section of it which attends this Congress.

We are here to renew contact with our friends and colleagues the doctors, the sanitary inspectors, the agriculturists, with whom we may argue our case, listen to theirs, and perhaps quarrel in friendship, to the end that the march of public health shall continue.

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Abattoirs and Meat Inspection—A Review

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We live in such a wonderful age that things which in more ordinary times would have arrested us, are allowed to pass by almost without notice. Everyone who takes sufficient interest knows that constantly White or Blue Books are issued on some subject or other, which are the result of much experience, study and research by those responsible for them.

These reports are of enormous importance to people directly concerned with their subject, but only too often interest, if awakened, soon dies, and apathy takes its place.

Within recent years we have had the report of the Committee appointed by the Economic Advisory Council on "The Slaughtering of Livestock";[1] the report of the Committee on "Cattle Diseases";[2] and the report of the Technical Committee on "Abattoir Design."[3]

Although, in all, the economic position is uppermost, they all serve to remind us that their problems are with us and awaiting solution. There are some people who divorce the economic from the public health problem; in fact in most places in England the abattoir is controlled by the markets committee of the local authority while the meat inspection is carried out by members of the public health department under the control of the health committee, but it is obvious that one of the tasks of the immediate future is to so co-ordinate activities that they shall all contribute to the successful control not only of animal diseases but diseases of man attributable to his association with animals.

It is of the utmost importance that local authorities and their representatives should study the problems awaiting them not only in the light of their own experience, but taking advantage of the wealth of information which has been collected for them and embodied in these valuable reports.

It has, therefore, been considered opportune to review the whole question of abattoirs and meat inspection in this paper to-day, and so provide the framework on which a fruitful discussion may be built.

Abattoirs

In these may be included the municipal slaughterhouses, co-operative slaughterhouses, bacon factories, and certain of the private slaughterhouses.

Municipal slaughterhouses have been provided mainly for the purpose of more adequately controlling and inspecting the slaughter of animals for human food. The movement began in Scotland as early as 1860, but although a few authorities in England did provide abattoirs, there has been no general movement right up to the present time.

Dr. Leighton, speaking at a meeting of this section in 1925, said that 92 per cent. of all the meat killed in Scotland was killed in public abattoirs, and that there were under 400 private slaughterhouses in the whole of Scotland. The Economic Advisory Council's Committee reports that there "are 115 public slaughterhouses in England and Wales and about 16,000 private slaughterhouses. They estimate that in England and Wales 27 per cent. of the slaughtering takes place in public slaughterhouses."

There has been no system in the provision of public slaughterhouses. The local authority taking a serious view of its responsibilities in meat inspection has provided the centralised slaughterhouse, but the majority have left the industry to develop along its own lines. Most of the public slaughterhouses in England are owned by the municipalities, but the operations connected with slaughtering are carried out by the owners of the cattle themselves or through their agents. The co-operative slaughterhouses, bacon factories and private slaughterhouses are premises where all the operations carried on are part of the same undertaking, directed by the interests of the industry itself. The committee on the slaughtering of livestock makes out a good case for the complete reorganisation of the control of slaughtering.

The committee state in their report that they estimate that 27 per cent. of the slaughtering in England takes place in public slaughterhouses; where Dr. Leighton gave 92 per cent. as the corresponding figure for Scotland. England, therefore, with only 115 public slaughterhouses, can revolutionise its methods much more easily, if it is considered necessary or desirable, than can Scotland. There are many questions at issue, but before anything can be done, the main issue must be dealt with.

It is now generally admitted that the private slaughterhouse must go, and that more or less concentration and centralisation of slaughtering must be effected. The general trend is for the essential services to be so combined as to give efficient service with economy—the electric grid system is a good example. Everyone, I think, will agree that the meat industry can, with profit to all concerned, follow somewhat on the same lines, but with this difference—the economies can largely be effected by centralisation without the necessity for recourse to complete public control of the animals and their products.

The packing-houses of South America are businesses controlled by individuals or companies and run for their benefit.

If it is necessary to take over certain processes for economic reasons, there does not appear to be any argument in favour of leaving any part of the control of the animal or its products in the hands of the meat trader. It is obvious, however, that in this country we are not at present ready for State control of cattle and their slaughter, and in any case there would not be the same general efficiency as could be attained without recourse to complete control of certain trading operations.

In my opinion, the concentration of killing during part of the week is the best point the committee make against the present system. If killing could be distributed equally over the working week so that full use could be made of the accommodation, it would effect enormous economies, and that is a question for the trade.

The Food Investigation Board is doing very valuable work, which will be of immense benefit to the future generations, and the meat trade, before long, will be driven to condition meat properly before selling it. That will be the first step, as once the trade admits the necessity for this, the way will be open for daily killing.

The Treatment of By-Products

It has to be admitted that at present there is an enormous waste of by-products, which is simply due to the multiplicity of premises and widespread distribution. Concentration of slaughtering will eliminate most of the present losses.

With regard to utilisation of slaughterhouse waste, I was glad to see in the committee's report that a public slaughterhouse is not the only source of organic waste in a town. I would always prefer that the plant should be at the destructor rather than the abattoir, but as the committee point out, where the slaughterhouse is large enough there is sufficient material to be dealt with on the spot, and it can be allotted to an area on the site where it will not be a nuisance.

There never was such an opportunity as at present for real slaughterhouse reform. Sixteen thousand private slaughterhouses still exist,

and there are only, roughly, 120 public slaughterhouses. In addition, out of these 120 public slaughterhouses, there are probably not 20 which are up-to-date as judged by even the Continental standard. The committee, referring to these, says that "though they may not be of the best possible kind, it may be more economical for the present to use them as they are than to scrap them or to incur heavy expenditure on adapting them."

The areas with the largest kill, such as London, Liverpool, Birmingham and Sheffield, would certainly come into that category, and others like Coventry and Wolverhampton, although not having such large kills, but of modern construction, which could cope with much heavier kills if distributed, would also have to be retained for the present. It would probably also be found advisable to retain certain of the older ones, such as Manchester, Leeds, Bradford and Blackburn. The greater part of the country, however, could certainly with advantage be mapped out into areas and dealt with, somewhat on the lines suggested by the committee, with suppression of the private slaughterhouse and provision of regional slaughterhouses.

It will be remembered that the committee stated that, in future, municipal slaughterhouses should be operated continuously under one management, so that they should be in a position to adopt, as far as possible, the technical economies associated with American packing-house methods.

Following the receipt of this committee's report, the Minister of Agriculture appointed a committee "to consider and report on the technical requirements as regards output, structure, lay-out and equipment of factory abattoirs, in the light of modern practice at home and abroad in the processing and handling of meat, offals and by-products." This committee reported to the Minister in June, 1934. The report is very comprehensive, full of detail and, although some of its conclusions and recommendations will not be agreed with by many, of extreme value. This committee, like the parent committee, definitely insists on single control.

They consider that the specialisation of labour, the continuity of process and the uniformity of the finished product inherent in factory principles should, if applied to the slaughter and treatment of animals, result in the improvement in the standard of home-killed meat and by-products.

Discussing existing methods, they show the wasteful results of collection of raw material from the large number and variety of slaughterhouses.

They give a minimum output for a factory abattoir of:—

Cattle	...	...	320 weekly
Sheep	...	...	1,920 weekly
Pigs	...	...	480 weekly
Calves	...	...	160 weekly

They recommend a factory abattoir of three main floors and a mezzanine floor, the inedible by-products plant being housed in a detached two-floor building; which would also accommodate the boiler-house and isolation block. The lay-out and equipment follow the orthodox lines, except that they recommend the use of a pre-cooler divided into two chambers. All carcases and sides would be placed in one of these chambers, and as soon as it was filled, the chamber would be closed and dry air circulated in it. All meat should remain in the pre-cooler until the following morning, when it would either be taken out by the suppliers or would pass into the cooler.

There is nothing at all revolutionary in the structure and equipment recommended by the committee; in fact, the lay-out gives a logical sequence which is necessary for ordered working. A multi-floored building lends itself to ordered working and there is no difficulty about getting the animals to the top. There is afterwards a logical sequence which leads to the dispatch of the finished product from the loading platform at the base. The separation of the unpleasant waste on the dressing-floor is also of very great advantage, provided always that the remedy is not worse than the disease. By this I mean that the chutes and lower floor which receive the manure must be regularly and thoroughly cleansed.

One of the great advantages of centralisation would be the opportunity for the installation of labour-saving devices, which also accelerate processes and so help to improve the finished product. One of the best examples of this is in the pig-slaughtering hall, where the pig, after stunning, is hoisted by means of an electric hoist on to a bleeding rail; passes by means of a dropper into the scalding tank; is elevated to the dehairing machine, and thence deposited on to the scraping table, and then to the dressing rail. One has only to see the difference between carcases treated in the old way and those dressed under modern conditions to realise the necessity for reform. Overhead weighing machines, expensive in themselves, are equipment which in a large factory are not only essential, but are economical. The bleeding of all animals from bleeding rails, specialisation of labour in dressing and the subsequent pre-cooling, will result in a product much superior to the present.

The committee's recommendations, in brief, are that a national slaughterhouse board should have power to prohibit the erection of new or alteration of existing slaughterhouses by public authorities, and should prepare

regional schemes, to be operated by joint boards of local authorities constituted to act as regional slaughtering authorities. These regional authorities would operate the slaughterhouses, fix charges for slaughter, receive animals for sale as meat upon a grade and dead-weight basis, but not to deal in livestock or meat in any other way; be free to trade in and process slaughterhouse products; undertake the delivery of meat to butchers' shops or to intermediate depôts. Inspection and the closing of private slaughterhouses are also dealt with.

With the advent of the centralised slaughterhouse, together with the improvements in the preparation of the meat which have now been shown to be necessary, *i.e.*, conditioning, it would appear that the main recommendations of the committee could be met without having recourse to what virtually amounts to nationalisation of the meat industry.

The provision of abattoirs in the past has always led to the gradual diminution if not elimination of the private slaughterer in favour of the wholesaler, and as the wholesaler's business has increased so has his efficiency of administration. Eliminate the necessity of immediate sale of meat for early consumption by adopting the "conditioning" process, and the way is open for extending the slaughter over the full working week. In many abattoirs already, although the workpeople are not in the employ of the owners of the abattoirs, the management arranges the allotment of stances and to a large extent controls the output. It should not be impossible by a system of ballot to arrange the slaughterings satisfactorily. Under this system men would necessarily become specialists. The efficient employer would have men experienced each in his special branch of the work. My experience is that the inefficient man is soon found out in a public building, and I feel sure that with the enlargement of the factory and the greater experience gained by a full working week, there would be a uniformity of the finished product.

The argument for unified control for dealing with by-products would also be almost nullified through the centralisation of slaughter, as the bad treatment and scattered areas for collection are mainly the reasons for waste at present. If we can have a national slaughterhouse board, with joint boards of local authorities, surely the trade itself can set up cattle products boards or companies, which can deal just as efficiently and economically with the by-products; and the joint boards can be given powers to approve of one such organisation for each slaughterhouse.

I hope that the Government will not take the committee's recommendation of unified control too literally, because it will only be used as an excuse for further delay in some quarters. The time is long overdue when an attempt should be made to unify control in one way; that all the industry, and not parts of it, should be subjected to the public slaughterhouse system, with its inspection service, and schemes like those at Leicester and Plymouth should go on or be so amended as to come into a great national scheme immediately.

Meat Inspection

It is unfortunate that the meat industry, instead of looking forward, has attempted to stem the tide by objecting to the removal of the private slaughterhouse. Because of this there is great injustice to groups of members of the meat industry. It should be patent to everyone that either the meat traders in public slaughterhouses are over-controlled, or those having private slaughter-houses are under-controlled. There is no uniformity of method, standard or action in meat inspection as practised in this country, largely because of this anachronism. With the centralisation of slaughtering, however, meat inspection would cease to be the problem it is to-day and would cause less heartburning.

Taking the committee's minimum output of 320 cattle, 1,920 sheep, 480 pigs, 160 calves weekly, it would be comparatively simple to arrange for the inspection by whole-time meat inspectors. In the larger factories work could be more specialised so that the inspectorate would have the help of trained laboratory workers.

The accounts given by Dunlop Young and Morgan of the meat inspection service in South America and our own knowledge of Continental methods of inspection, show what can be done when the work is at hand and the necessary staffs available. An enormous amount of time would be saved which is now wasted in journeying from one place to another. Meat inspection, carried out by whole-time officers, specially trained for the purpose with standard methods, given a standard schedule to work to and working under supervising officers to ensure standard of action, would become an established fact.

We have at the present time the officers necessary for the work and Memo. 62 (Foods) as the standard schedule. The present individualism would be eliminated with the centralisation of control.

One very necessary accompaniment of centralisation of slaughter should be the standardisation of records and statistics, and these should be received and dealt with at a national bureau.

It is a matter of very great interest that in the factory abattoirs seen by Dr. Morgan much of the work connected with meat inspection is

done by staff paid by the industry but controlled by the inspection authority. The cost of inspection could be charged to the establishment without any hardship to the industry, as it would not be a heavy call and would be offset by the increased confidence given to the public.

Compensation for Confiscation

One of the ever-recurring topics for discussion at meetings of meat traders has been the question of compensation for confiscation. It has been claimed that as the butcher buys in good faith, if the carcase of the animal shows disease which warrants condemnation the State should pay the loss, not the butcher.

Centralisation of slaughter appears to me to carry with it the solution of this age-old problem. All animals would be submitted to an *ante-mortem* examination by veterinary officials with special knowledge of grading. Those which were passed would be valued for insurance and would then qualify for compensation, if condemned, out of a fund specially earmarked for the purpose.

I should not be in favour of limiting the compensation to any one disease such as tuberculosis, but would pay for any carcase, part of carcase or offal condemned. The source of the fund would be a matter for serious consideration. I consider that the farmer and butcher should equally share in producing the money. One thing is perfectly clear: that until there is uniformity of inspection, there will not be, and cannot be, compensation for confiscation.

The Slaughter of Animals for Human Food

With 16,000 private slaughterhouses and local option for the humane slaughter of sheep, humane treatment of animals for slaughter is a myth.

The butcher will tell you that "in our opinion, the most humane method of killing sheep is the knife." I do not know whether he really believes this or not, but I do know that he strongly objects to the little extra cost for humane slaughtering instruments, in spite of the fact that the public have to pay for it. I want to see the slaughter of animals for human food brought into the open. If the man in the street and his wife want lamb for dinner, I cannot see why they should object to the publicity which should be given as to how the lamb is obtained for them.

We should either be vegetarian or we should insist that the meat that is prepared for us should be prepared from animals which have been humanely treated in their passage from the place of production to the final dispatch. Such treatment can be provided in the slaughterhouses of the future, and whatever method is used for rendering the animals unconscious, there will be the advantage that there will be no opportunity for secrecy. Centralisation of slaughter would enable the authority to provide not only the staff available and competent for the meat inspection service, but also the best equipment available.

It has been found during the last few years that undulant fever is much more common than previously supposed. I remember that glanders in man in the old days was sometimes not recognised.

It may be that trichinosis is hidden under the diagnosis of rheumatism. We do not know whether there is much, little or no trichina infection in this country, because there is no examination for it. The German equipment, the trichinoscope, could perhaps, with profit, be adopted here. The same applies to the tapeworm infections of man which are derived from beef and pork. We know that these infections exist, but how often are they recognised and recorded in this country?

The Meat Inspection System

The system which has been evolved in South America, largely as a result of representations from this country, could well serve as a basis for our system. Dr. Morgan has given us an excellent account of meat inspection in South America in the Benjamin Ward Richardson lecture for 1935,[5] and I shall quote freely from the report of this lecture. The same argument for complete revision of our meat inspection system can be used as for the centralisation of slaughter; neither has got very far, so that we have not much to undo.

The service in South America is a veterinary service controlled by a department similar to our Ministry of Agriculture, and there are inspectors in charge of the stock-raising districts. We have this part of the service already in existence with veterinary inspectors in control of the scheduled diseases. The next grade is the veterinary officer in charge of the frigorifico, to whom are attached one or more veterinary inspectors according to the size of the frigorifico.

The next grade consists of a corps of assistants, or "adjutantes," as they are called. They are young men not in possession of a veterinary diploma but who, having knowledge of the trade and showing aptitude for the work, have had six months' special training in the elements of veterinary hygiene and pathology. There is a further grade of assistants who are employees of the establishment. These men are employed in the routine inspection of the simplest kind, such as the examination of the heart and liver and of the mediastinal and mesenteric glands, which are very easy to find and which, being detached from the carcase, can be cut about without doing harm to the appearance and form of the carcase itself. The more delicate and

responsible examinations, *e.g.*, inspection of the glands of the carcase, cervical, retropharyngeal, precrural, iliac, etc., are generally made by the adjutantes. The veterinary inspector who makes the final decision has the results of these examinations to assist him. When considering this thorough and ruthless examination, it is well to remember that it has been designed and carried out to the requirements of our Minister of Health.

After seriously considering the foregoing, can we say that we have a system of meat inspection in England? We have patches of the country where serious attempts are made with the staffs at the disposal of the local authority to inspect the carcases of animals slaughtered, but generally speaking, the answer to our question must be in the negative.

On the Continent the inspection in the large abattoirs is very much on the lines adopted in South America. The service is primarily a veterinary service and includes *ante-* and *post-mortem* inspection.

I have already stated that we have in this country the officers necessary for the work—the Royal College of Veterinary Surgeons has recently extended its training period to five years, apart from post-graduate training, and the Royal Sanitary Institute has its examinations for inspectors of meat. In my experience there is not sufficient practical training given to students for the Royal Sanitary Institute certificate at some of the teaching centres. This is a question which I know is receiving the serious consideration of the Council of the Institute. Memo. 62 (Foods) should be replaced as recommendations by a similar schedule issued as an order.

With centralised slaughter at abattoirs adequately staffed for complete inspection, the public would get what they are entitled to get: meat carrying a guarantee of safety; and the meat industry would get a sense of security and fair play which some of the reputable members do not at present enjoy.

References

[1]Economic Advisory Council.—Committee on the Slaughtering of Livestock Report, 1933.

[2]Economic Advisory Council.—Committee on Cattle Diseases Report, May, 1934.

[3]Ministry of Agriculture and Fisheries.—"Economic" Series, No. 40. Abattoir Design. Report of Technical Committee, 1934.

[4]Benjamin Ward Richardson Memorial Lecture, 1933.—"Slaughterhouse Reform," by Professor J. H. Jones, M.A.*

[5]Benjamin Ward Richardson Memorial Lecture, 1935. "Some details of the System of Health Inspection of Meat and Meat Products destined for export, in the great Abattoirs of South America," by M. T. Morgan, M.C., M.D., D.P.H., Medical Officer, Ministry of Health.*

*Obtainable from the Royal Sanitary Institute.

The Accredited Milk Scheme in Operation

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The Milk Marketing Board is an instrument for rationalisation of the milk industry which for some years previously had suffered chaotic upheavals with the advent of each contract period. In addition to organising the market it has to find an outlet for more and more fluid milk, and the "Milk in Schools" and the "Accredited Milk" schemes are two strategic measures for this purpose.

After some preliminary skirmishing, the Accredited Milk Scheme in its present form commenced on May 1st, 1935. Its great appeal lies in its simplicity. For many years it had been a fair complaint of the progressive farmer that he got no better price for his milk than did his slovenly neighbour. Practically all producers are now regimented into the ranks of the Board and all must pay levies. Those who become accredited are paid a bonus of a penny per gallon derived from levies paid by themselves and all other producers. The Board is in no sense a health organisation, but it has provided a wonderful incentive to the production of clean milk, and has done a wise thing in utilising the existing machinery of the Milk (Special Designations) Order of 1923 in linking accreditation with the grade "A" milk standard.

The accompanying charts illustrate the progress of the scheme to the time of going to press. In Fig. 1 the unit is the gallon of milk and the graph shows that in less than twelve months' working the volume of accredited milk produced is very nearly one-third of the whole. Probably the rate of increase will slow down in the autumn of this year, but the achievement already is very remarkable and a demonstration that the most effective stimulus to progress is a guaranteed financial inducement. Grade "A" licences have been issued at a rate 250 times as fast during the scheme as before it.

The graph can be read in another way, not strictly accurate but a close enough approximation. If each column is taken as representing one penny, the black portion is the fraction comprising the monthly levy and the remainder is the proportion of the penny bonus which is actual profit. Clearly the profit will vary inversely as the scheme progresses. But as only accredited producers will continue to receive the extra penny per gallon, the character of the bonus will gradually change into that of a fine on those who do not become accredited. In some cases the cost of improved equipment and methods may be thought to exceed the return. A table of costings published in the April number of *The Home Farmer* shows a range of necessary capital expenditure per cow

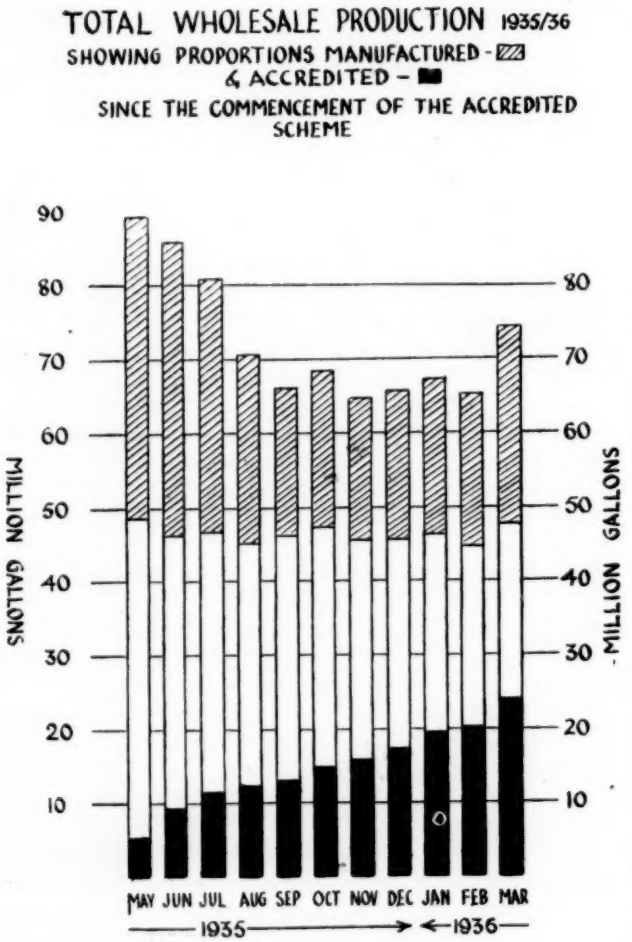

FIG. 1.—Prepared by the Statistical Department of the Milk Marketing Boad.

from £1 17s. 3¼d. to £12 16s. 1d., which illustrates the difficulty of stating a figure applicable to any particular farm. The return, however, can well be approximated on a basis of 710 gallons per lactation, which is the average for the last milk-recording year. This projects a sum of nearly £3 per cow per annum, less the amount of the levy. It appears a fair enough return to attract fresh capital to British dairy farming.

In Fig. 2 the unit is the producer. At the time of preparation of the map 10 per cent. of all producers are accredited and are producing one-third of the total volume of milk. It is therefore evident that the scheme has attracted those with the larger herds. The variation in proportions of accredited farms in the different counties ranges from 1 to 32 per cent., which is too wide a margin to be explained by any single cause. One can assume that as all producers must contribute to the levy which provides the bonus they will want to qualify. What are the factors which prevent this?

The Milk Marketing Board has stressed the provision of free service by local authorities,

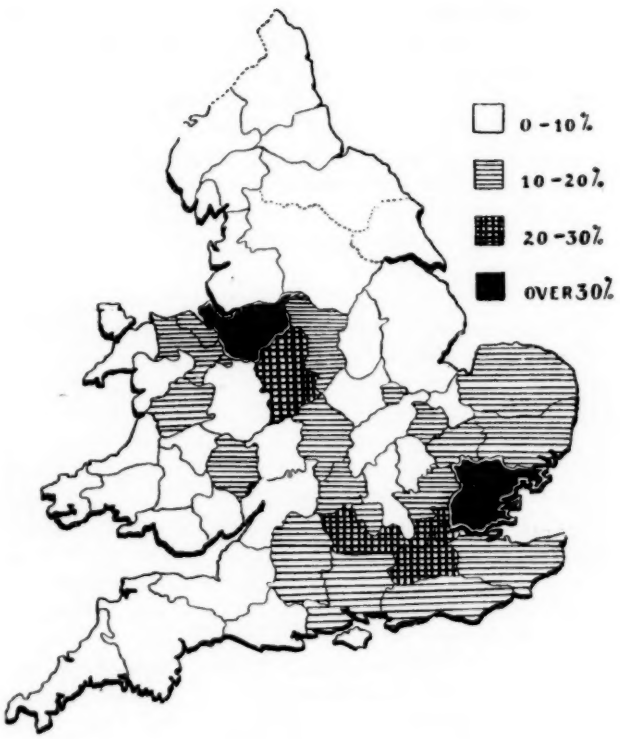

FIG. 2.—Percentage of Accredited Milk Producers in each county, April, 1936.

and an illustrative map was published in *The Home Farmer* for August of last year. Comparison of that map with Fig. 2 does not show a close parallelism between counties which provide free service and those which have the greatest density of accredited producers. The industrial north and the rural west country show up badly. Proximity to the greatest centres of consumption does not appear to have any clear-cut effect, as witness the difference between Lancashire and Cheshire, between Essex and the Thames Valley on one hand and Buckinghamshire and Bedfordshire on the other, and between the counties surrounding Birmingham. Study of the map suggests that economic factors are not so important in determining variation as the mental outlook both of producers and officers of local authorities. Essex held the first clean milk competition many years ago. The Thames Valley shows the influence of the Reading school. Cheshire and Staffordshire got a flying start in the number of licences held before the inception of the scheme. These illustrate the force of education, of example, and of the personal touch.

The County Councils Association has been disturbed at the lack of uniformity, and the Executive Council circulated a memorandum from their meeting of January 22nd, which contains constructive recommendations. It calls attention to the need in counties of co-ordinating committee work by creating a joint sub-committee. Next it advocates

conferences between officers of the county staffs and those of the district staffs who are responsible for buildings. Perhaps it is time some of the duties of the minor local authorities were re-allocated. A county is not too big a unit for central control to be necessarily inefficient provided that existing officers with local knowledge are utilised. Conferences would still be very necessary. The memorandum continues by applauding councils who have established whole-time veterinary staffs, upon whom the major part of the work falls.

The County Councils Association is careful to avoid offence, but the memorandum clearly implies that the lack of uniformity is due to variation in judgment by individuals presented with the same problem in different areas. There can be little doubt that it is a factor of prime importance, and when coupled with differing degrees of local authority activity accounts for a large measure of the range of enthusiasm shown by producers. A questionnaire circulated by the Society of Veterinary Officers contained the question, "What officer of the county council examines premises and methods of production with a view to the granting of a licence?" The 23 replies showed an interesting choice of cooks to spoil the broth. County veterinary officers lead with a score of eight, medical officers of health five, agricultural organisers and county sanitary inspectors three each, dairy instructress and staff one, chief inspector of weights and measures one, while in the remaining two cases the medical officers were coupled respectively with the dairying superintendent of the agricultural department and with the agricultural organiser. A frank discussion on general standards of dairy hygiene is likely to be valuable if the views of all these officers can be heard at one time.

The accredited standard is no higher than was projected for all milk in the Milk and Dairies Order of 1926. Many local authorities neglected to administer that Order. Agricultural depression has been responsible for some measure of leniency, particularly in the case of the small farmer without capital behind him to embark on improvements, who is dangerously buying his cattle and equipment on the hire-purchase system. One may sympathise with individuals, but sympathy must not be permitted to influence the administration of that very reasonable Order. After all, the process of milk production now is very different from the time when Boswell recorded Dr. Johnson's "Meditation on a Pudding"—"Milk pressed from the swelling udder by the gentle hand of the beauteous milkmaid whose beauty and innocence might have recommended a worse draught. . . ." Many there are who would willingly revert to the leisured calm of the old days, but this age has decreed that the milkmaid's beauty will be none the worse for a wash, the cow too, and instead of gently stroking the udder, she had better clap on a milk machine and hurry up with it. It is the quality of the milk that now recommends the draught, not the innocence of the lady attendants.

Too often we hear that the right type of man can produce clean milk on a manure heap. Milk production should not deliberately be made to resemble an obstacle race, nor an occasion for conjuring tricks. The personal ability of an applicant for a licence does affect the judgment of the inspecting officer, but it should do so to a very small degree. The guiding principle is that if the applicant should leave the farm, his unknown successor could reasonably be expected to maintain a good standard with the same equipment.

On questions of detail relating to buildings, equipment and methods there will always be different views. One must remember that variations of farming practice between different districts are based on traditions which are often sound, but the ancient reason may have vanished and only habit remain. The wise inspector will tread gently on traditional bad habits and not attempt to standardise everything. The farmer, his wife, labourers and cows are infinitely variable factors. So are inspectors.

Considerations of space will not permit a disquisition on detailed practice here, but some questions of daily difficulty must be voiced. Should a cowshed allowing only 400 cubic feet per cow ever be accepted? Is a milking machine a dangerous weapon in the hands of the average farm labourer? Is a steriliser always necessary? Should cold sterilisation be permitted? Is refrigeration on the farm worth the cost? Should the water supply be tested bacteriologically before issue of a licence? How often should the milk be sampled? There are also questions that trouble only veterinary officers. What is the proper way to deal with the non-tuberculous indurated udder and the chronic uterine discharge? Some measure of agreement on these and many other points continually encountered by the front-line officers is urgently needed.

How is the present wave of enthusiasm to be maintained and developed? Is it the intention of the Board eventually to utilise accredited milk only for liquid consumption and non-accredited for manufacture, with a price distinction? Does the Board favour the system of penalty or of reward or a combination? The inclusion of tuberculin-tested herds in the ranks of the Milk Marketing Board cannot long be delayed. If any more bonuses are to be distributed, let them not be on gallons of milk but on calves reared to milking age free from disease. Tuberculosis, contagious abortion and

(*Continued at foot of col.* 1, *p.* 1430.)

The Veterinary Record

November 28th, 1936.

RESEARCH ON GRASS DISEASE IN HORSES

THE brief review of the present position of research on grass sickness in horses published in this issue on page 1438 stresses again its extreme seriousness. The recent outbreak in Scotland has been so grave that the agricultural community and the Scottish Press have become alarmed; so much so that an urgent outcry has been raised for assistance to stay this dread menace to the horse industry of Scotland. It is comforting to the veterinary profession to note that the efforts of the veterinary investigators, who have been engaged on the solution of this problem, have received the unqualified approval and commendation of such an influential body as the Agricultural Research Council. This tribute to veterinary workers is especially welcome in view of the unfinished and in many ways preliminary nature of the work already carried out by the staff of the Animal Diseases Research Association. It is likely to encourage the profession in the assurance that some of its efforts are recognised as worthy contributions in the field of research.

At the request of the Department of Agriculture for Scotland, a joint committee of the Agricultural Research Council's Animal Diseases and Nutrition Committees was set up to enquire into the planning and execution of the research on grass sickness. This committee, which consists of ten non-veterinarian scientists and agriculturalists, together with two veterinary surgeons, has reported to the Council in such terms that the latter body expresses itself as being "satisfied that no possible clue to the cause and ultimate prevention of the disease has been neglected; that the investigations have been well conceived and ably pursued; and that . . . . every opportunity has been seized of seeking the advice of specialists who might assist in the unravelling of the cause of this baffling disease . . . . and the Council are convinced that the programme of research now adopted . . . . is wisely planned and should be vigorously adopted." While we cannot yet commit ourselves to their assumption that *every possible clue* has been taken up and explored, and while we realise that even the present plans may not result in a final solution of the problem, the report is significant in many ways. It acknowledges that veterinary investigators are capable of effectively planning and executing research in their own fields of work provided they are adequately supported financially and are given sufficient staff and experimental material. It is also noted that the investigators had not worked as an isolated unit but had sought the advice of all from whom they might have gained any help. We are persuaded that the Agricultural Research Council will find, on enquiry, that this picture of the conduct of veterinary research by veterinary research workers is a general one.

We, for our part, feel certain that the profession will gladly collaborate with the Agricultural Research Council or any other body, which, when dealing with our problems, shows a genuine understanding of the difficulties under which we have hitherto laboured and realises that our efforts under the recently improved conditions are likely to be far more fruitful than has been possible in the past.

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mastitis are eventually controllable to the profit of farmer and consumer alike, and measures directed against disease are the natural sequence to the present movement.

Critics of the general standard of milk hygiene in this country may be comforted to read of conditions "somewhere in France." The following quotation relative to the illicit addition of water is taken from a League of Nations publication: "When done at the farm, it is far more dangerous than that secret matutinal operation of which the public fountains themselves are sometimes the only witnesses. At any rate, the water from the public fountains is fairly pure. . . ."

STUD GOAT SCHEME

This scheme, having for its object the improvement of the productive quality of milch goats kept by smallholders, cottagers and others of similar position, is being continued for the season 1936-37. For the current breeding season, which lasts till February 28th next, 101 stud goats have been registered and are standing at various centres throughout the country. The report on the operation of the scheme during the season 1935-36 has now been issued. The Ministry's grant available for premiums was increased from £270 to £320, and 37 counties were represented as compared with 34 in the previous season. The number of goats accepted for registration increased from 76 to 92, classified as follows: British 23, British Saanen 20, Saanen 18, British Toggenburg 9, British Alpine 8, Anglo-Nubian 8 and Toggenburg 6. All the Saanens were descendants of those imported in 1922. The Secretary of the British Goat Society reports a growing interest in the scheme on the part of cottagers and others who appreciate the improvement in their milking stock that is being effected by its means.

Clinical Communication

NAVICULAR DISEASE—AN EXPERIMENT IN TREATMENT*

W. W. Lang, M.R.C.V.S.
Brigg, Lincs.

Some time ago I saw and diagnosed, correctly as I believe, a case of ulceration of the stifle joint, the animal being so lame that I advised destruction. Judge of my surprise to be told a year later that the patient had become quite sound again. Enquiries elicited the information that she had stood in the field for hours at a time with the leg completely flexed; this apparently allowed the ulceration to heal. This experience made a great impression on me and I therefore decided to experiment on similar lines on the following case of navicular disease.

The subject was a weight-carrying hunter mare, twelve years old. For two years previously she had shown the typical clinical symptoms—contracted upright foot, pointing, lameness wearing off with exercise, etc.

I ligatured the external digital vein with a view to inducing hyperaemia in the foot, fed the mare on cod-liver oil and sterilised bone flour for purposes of repair, had the toe shortened as much as possible and then fitted a rolled toe with a bar, one inch square, welded across the heels on the ground surface to take the pressure of the tendon off the navicular and allow healing.

The patient improved daily for a fortnight, after which lameness became more pronounced than ever. At the end of six weeks it was decided to let the foot down at the heel gradually but retaining the rolled toe which she still wears.

Lameness slowly decreased, this taking place gradually during the succeeding hunting season until she finished up a sound animal in spite of carrying a rider who weighs over 17 stone.

The treatment was adopted in April, 1935; she is still sound in action but the affected foot remains smaller than its fellow.

Whether the hyperaemia induced and feeding with cod-liver oil and bone flour had any beneficial effect I am not prepared to say, but I am of opinion that the lameness which recurred a fortnight after commencement of treatment was due to the setting up of adhesions. If that is so, then these, with the possible exception of those between the tendon and the navicular, appear gradually to have given way.

I am confident that my recollection is not at fault in stating that Professor Frost, of America, related at the Belfast conference that he found so many cases of adhesion between the flexor tendon and the navicular in animals which had never been known to be lame that he had to cease providing fore feet for dissection by his pupils.

I know as well as anyone that "one swallow does not make a summer" but for all that I intend repeating the experiment in navicular disease and trying treatment on similar lines in ulceration of the stifle whenever the opportunity arises. I am keeping an eye on the navicular mare for a *post-mortem* but she is so fit and well that she might well outlive me.

*Communication made to a meeting of the Lincolnshire and District Division, N.V.M.A., held at Lincoln, October 8th, 1936.

Abstracts

[Whey Treatment in Open Joint. Campbell, W. A. (1936.) *Vet. J.* **92.** 8. 303-304.]

The author gives a favourable account of this method of treatment, though the difficulty of treating the coffin joint is stressed. Three cases are described, an acute case in the stifle joint of a hunting mare, a torn fetlock joint in a steeplechaser and a chronic case in the hock joint of a cart mare. These cases made good recoveries after about two to three ounces of whey were injected into the affected joints.

D. L. H.

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[Human Infection with the American Hog-Cholera Bacillus: A Third Example in England. Boycott, J., and McNee, J. W. (1936.) *Lancet.* September 26th. 741-2.]

The paratyphoid C—suipestifer or hog-cholera sub-group of the Salmonella group of bacteria, comprise the following:—

S. paratyphi C. (Eastern or Hirschfeld variety) a diphasic organism which, as far as records go, is of human origin only and a cause of human disease in various parts of the world, the only cases of infection which have appeared in this country being apparently imported.

S. cholerae-suis (*Bact. suipestifer* American type) also diphasic, a rare cause of disease in man but isolated from pigs in America and in Japan.

S. cholerae-suis var. *Kunzendorf* (*Bact. suipestifer* European) a monophasic type which is commonly isolated from pigs in this country and occasionally causing disease in man.

To these the authors could have added the Glasser and Voldagsen types (*S. typhi-suis*) which infect young swine and are apparently not found in man.

The article describes a case of a woman from North London who prior to admission to hospital had suffered from general malaise and fever for some six weeks. The fever continued but was irregular, accompanied by bronchitis,

pains in a number of situations and epigastric rigidity. There was sudden collapse with circulatory failure and death occurred 29 days after admission to hospital. Necropsy revealed an enlarged heart due chiefly to hypertrophy and dilation of the right ventricle, and an acute purulent meningitis.

An organism which proved to be *S. choleraesuis* (*Bact. suipestifer* American type) was isolated from the blood during life and also from the thrombus in the heart, meninges, spleen and gall-bladder after death.

The source of the infection is unknown. The interest lies in the puzzling clinical features and the rarity of this infection in this country both in animals and in man.

R. L.

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[**I.—The Effect on Cl. welchii Toxins of a Substance Present in the Normal Intestine.** Bosworth, T. J., and Glover, R. E. (1935.) Report Inst. Anim. Path. Camb. **4**, 79-93. 11 tables. (11 refs.)]

II.—Some Observations on the Physiological Actions of Cl. welchii Toxins. Nicholson, J. A. (1935.) *Ibid.* **4**, 212-226. 6 tables. 18 figs. (16 refs.)]

I.—It was shown that the addition of gut-filtrate from normal lambs to solutions of precipitated dried *Cl. welchii* toxins increases the potency of type D toxin but has no effect upon types A or C toxins. The effect on type B is limited to that component of this toxin which it shares with type D. It was further established that it is the heat stable fraction of the toxin which becomes activated and that the activating principle can be obtained from gut-filtrates by precipitation with absolute alcohol. It was proved that the activating substance is trypsin but the way in which it combines with the D toxin was not determined. Toxin-antitoxin experiments indicated that activated D toxin contains the same amount of neutralisable toxin as was present before treatment.

II.—It was shown that all four types of *Cl. welchii* toxin possess similar physiological actions. On intravenous injection, they cause a rapid rise of blood pressure, decrease in amplitude and slowing of the respiratory movements, constriction of the coronary arteries, heart block and ventricular fibrillation. They also act upon the higher centres and smooth muscle. Tissues which have been acted upon by sublethal doses of the toxins no longer react in the same manner to subsequent doses of toxin. In this case many minimal lethal doses may be given without causing serious effects and the onset of death is slow. A rapid method for the differentiation of the four types of toxin is discussed. This is based on the action of the toxins on the isolated perfused rabbit heart.

J. A. N.

[**The General Aspect of the Problem of Organ Specificity.*** Witebsky, E.]

Injection of saline suspensions of organs into rabbits may lead to the formation of the following antibodies: (*a*) species specific, (*b*) heterogenetic, (*c*) group specific, (*d*) organ specific. Antisera may contain simultaneously either one or several of the different antibody types. Organ specific antigens may be present:—

(1) In all homologous organs of different species,
(2) In many but not in all homologous organs of different species,
(3) In one organ of one species only, and finally,
(4) Specific cell properties may be found in organs which are altered by disease.

According to our present knowledge, only organs of the nervous system and its derivatives belong to the first group, with the exception of the crystalline lens. Serological methods have proven the presence of common antigens as well as of special ones found only in certain portions of the nervous system. Alcohol soluble substances are mainly responsible for this type of organ specific qualities. The serological differences between fœtal and adult brain on the one hand and between fish and mammalian brain on the other raise ontogenetic as well as phylogenetic problems.

Thyreoglobulin is the representative of the second group of organ specific antigens.

As an example of the third group the red blood cells of the guinea-pig and of the horse may be mentioned. They contain organ specific antigens which are limited to the respective species.

Within the fourth category specific antigens of malignant tumours are of special interest. Saline suspension of malignant tumours sometimes produces tumour specific antisera when injected into rabbits. Such specific antisera may react *in vitro* with alcoholic extracts of malignant tumours which by themselves do not induce the formation of tumour specific antibodies. The question of tumour specific antigens needs, however, further investigation.

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[**The Prophylaxis and Serum Treatment of Animal Diseases Caused by Anaerobic Bacteria.*** Dalling, T.]

In Britain, the anaerobes causing disease in domesticated animals are *Cl. tetani*, *Cl. chauvoei*, *Cl. oedematis maligni* (*Vibrion septique*), *Cl. welchii* and *Cl. oedematiens*. Prophylactic measures are successful, and in some cases antisera are helpful in effecting recoveries.

Cl. tetani.—Tetanus occurs in nearly all

*Abstracts of communications made to the Second International Congress for Microbiology, London, July 25th-August 1st, 1936.

domesticated animals, but is most commonly found in the horse. Tetanus antitoxin was for long the only prophylactic used. For curative purposes large doses are injected. Active immunity is produced by the use of tetanus toxoid or the alum precipitate of tetanus toxoid.

Cl. chauvoei.—Blackleg, or blackquarter, in cattle and sheep is often caused by *Cl. chauvoei.* Products varying from attenuated spores (pellets, threads soaked in old cultures, etc.) to natural or artificial aggressins, give useful prophylaxis. Filtrates of three- to four-day broth cultures are safe to use and are of high immunising value. *Cl. chauvoei* of bovine and ovine origin differ somewhat, hence the aggressin should be prepared from homologous strains. Immunity may also be produced by the injection of large amounts of the "O" antigen (washed, boiled cultures). Antiserum can be produced in horses, and, in large doses in the early stages of infection, is effective.

Cl. oedematis maligni.—Cattle, sheep and horses suffer from natural infection. In sheep, the most important is a septicaemia, *viz.*, braxy (bradsot). Active immunisation against braxy is carried out on a large scale. Preparations, varying from actual toxin to formalinised whole culture (anaculture), reduce the death rate from 10 to about 1 per cent. Antitoxin prepared in horses is valuable, especially in cattle, for prophylaxis work. For curative purposes large doses must be injected in the early stages of the infection.

Cl. welchii.—Sheep are most subject to infections with the *Cl. welchii* group, *e.g.*, lamb dysentery, pulpy kidney, struck, etc. *Cl. welchii* has been classified as types A, B, C and D, and work here shows that these probably are inter-related. At least five toxins are produced.

Lamb dysentery is essentially associated with the B type of culture and its toxins. It is a true entero-toxaemia, the micro-organism being only rarely found in the tissues. Prophylaxis consists in (*a*) the use of vaccine (consisting of formalinised culture) on the mother sheep giving rise to an immunity which is passed to the lamb in the form of antibodies in the colostrum, or (*b*) the use of antitoxin in the lamb within a few hours of birth.

Prior to the identification of *Cl. welchii*, type B, and the resultant method of prophylaxis, from 50,000 to 150,000 lambs died each year in North England and Scotland from lamb dysentery.

Pulpy kidney is also an entero-toxaemia. In this country it occurs in lambs of a few weeks of age, and so differs from the infection in other countries where older lambs suffer. The disease is associated with the D type of culture. Active immunisation is difficult to establish, but results from the field show that antitoxin is valuable for prophylactic work.

Struck, etc., is an infection in older sheep, especially in certain districts, associated with the C type of the organism. Active immunisation can be set up by the usual types of antigen. Most work has been done with formalinised toxin (anatoxin).

Cl. oedematiens.—Infection with *Cl. oedematiens* is occasionally found in sheep, cattle and horses. Active and passive immunisation can be carried out by the above methods.

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[**The Prophylaxis of Braxy.*** Greig, J. Russell.]

Various forms of vaccine have been used.

Formalinised whole cultures, prepared from the *Vibrion septique*, have reduced the incidence of the disease in infected areas from 7 per cent. to 0·64 per cent. During the last four years, approximately 200,000 doses of vaccine have been issued by Moredun Institute, and the results have been consistently successful. A method of double vaccination, with an interval of 14 days between each inoculation, was originally practised, but more recently it has been found that a single inoculation affords adequate protection, except on certain farms on which the disease occurs in a very virulent form.

Review

[**Exotuberculin in Human and Veterinary Medicine.** G. Finzi. (1936.) pp. 306. (126 refs.) Milan: Editorial Society "Cremona Nuova." (L. 30) French, Spanish, German and English summaries.]

It has been suggested that the activity of a tuberculin depends on the exotoxins contained in it and the author claims to have produced a tuberculin rich in exotoxins which has proved itself superior to old tuberculin both as a diagnostic agent and for therapeutic purposes. This substance has been named exotuberculin (E.T.F.) and the book under review gives detailed information regarding its preparation and use. In cattle, doses of 2·0 c.c. are recommended for subcutaneous or intramuscular injections which, in tuberculous animals, are followed by a higher and more rapid rise in temperature than when old tuberculin is used. A substance known as slaked exotuberculin (esotubercoline spente) has been prepared from exotuberculin which contains a specific carbohydrate but no specific proteins. It will not cause a reaction when injected into tuberculous subjects and is claimed to be of value as a therapeutic agent.

The next International Congress for Microbiology will be held in 1939 at Atlantic City, New Haven, U.S.A.

Reports

GOLD COAST

DEPARTMENT OF ANIMAL HEALTH, 1935-36

This report shows, in a most convincing manner, the situation which is arising in some colonies as a result of adequate veterinary control unaccompanied, from the start, by energetic action to better the environmental conditions of the stock. That section which deals with disease demonstrates the effect of prophylactic treatment and quarantine measures. Gradually, the mortality is being lowered, disease becoming less of a menace, and much economic loss being prevented. This has resulted, in the Gold Coast, in many more cattle being available for the markets. At the same time, the quality of the animals is, on the whole, deteriorating and this deterioration must quickly become more pronounced unless urgent steps are taken at once. Both in the Colony itself and in Ashanti, an increased demand for meat has been responsible for the wholesale castration, and sale, of young male animals. "Thousands of cattle can be inspected in the bad areas without a good mature bull being seen," says the report. So serious has the situation become in some districts that the department has advised native administrations to purchase young males, keep them until mature, and then issue them to village herds. "It is exasperating to see numbers of good bulls produced where a Government bull is on issue and these animals later castrated or sold by the owners for slaughter." Surely, there is something radically wrong when such a state of affairs is possible. True, Government farms, under the native administrations, whilst breeding bulls for issue, are endeavouring to become demonstration centres for more efficient management, and propaganda has been commenced in connection with village cattle-mastership. There is no mention, however, of a general and intensive effort to improve matters in connection with an industry which is of the utmost importance. Prices are rising, and over 70,000 cattle and sheep were imported, during the period under review, for slaughter purposes. That incentive which is lacking in so many colonies, an adequate market, appears to be abundantly present in the Gold Coast and it is distinctly discouraging to read that, in the Northern Provinces, it has not been made clear to all who are executively responsible for livestock improvement. "It behoves native administrations to formulate measures for the preservation of their stock," says the report. Even if the Department of Animal Health is only advisory, surely it is the proper one to formulate measures, even if it is powerless to carry them out.

That section of the report which deals with the prevention and handling of disease is a record of progressive effort, but parts of the sections dealing with animal husbandry make sad reading.

J. S.

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CITY OF SALFORD

VETERINARY DEPARTMENT, 1935

The veterinary officer (referred to as "Inspector" in the report), Mr. A. Alexander, deals with the work carried out under his supervision for the year 1935.

Diseases of Animals Acts

Anthrax.—Ten investigations were made—negative in each case.

Importation of Dogs and Cats Order, 1928.—Fifty-six ships were visited to ascertain that dogs were being controlled in accordance with the provisions of the Order.

Foot-and-Mouth Disease.—Twice during the year the City was included in an "Infected Area," the area being under restrictions for periods of 10 and 15 days respectively.

Swine Fever Order, 1908.—Eight outbreaks of the disease were notified to the Ministry of Agriculture, all of which occurred on slaughterhouse premises. The total number of carcases condemned in this connection was 53 and these were destroyed by burning at the Corporation's destructor.

Lancashire Swine Fever Infected Area Order, 1934.—Owing to the number of outbreaks of the disease in the county, this Order was made and came into operation on January 1st, 1935. The desired effect having been obtained, the Order was revoked on June 10th, 1935.

Regulation of Movement of Swine Order, 1922.—Licences authorising the movement of swine were granted for 234 store and 12,942 fat pigs into the City and 81 stores and 198 fat pigs out of the City.

Tuberculosis Order, 1925.—One case was dealt with under this Order. The animal was affected with tuberculosis of the udder and *post-mortem* examination showed the disease to be "advanced."

Importation of Canadian Cattle Order, 1933.—A large number of Irish cattle and sheep and occasionally Canadian cattle are received. Fourteen thousand six hundred and nine cattle and 28,977 sheep were received during the year and licences authorising the movement out of the City of 12,566 cattle and 26,573 sheep were granted.

Transit of Animals (Amendment) Order, 1931.—There are three cattle stations in the City which were regularly visited. Road vehicles used for the conveyance of cattle were

frequently inspected and record books examined.

MILK SUPPLY

Milk Supply to Institutions.—Only grade "A" and pasteurised milk is used in the local hospitals and schools. When tenders are received the farms are visited by the veterinary officer and a sub-committee of the Purchasing Committee and reports submitted to the Purchasing Committee. The selected farms are regularly visited by the veterinary officer. Thirty-three samples of this milk were examined and only two failed to comply with the standard required for grade "A" milk.

Inspection of Dairies.—Most of the milk consumed in the City is produced outside the City boundaries. The number of City farms is not given. The dairies in the City are regularly visited. Four hundred and seventy-two samples of mixed milk were taken for biological examination, 48 of which were found positive for tuberculosis.

Twenty-five samples of pasteurised milk were examined by the phosphatase test and twelve were found unsatisfactory.

Inspection of Meat.—Tables are given showing the amount of meat seized and surrendered as unfit for food. 63·12 per cent. of the total meat seized was seized for tuberculosis. There are five private slaughterhouses, three of which are used for killing pigs only, and one public abattoir. Forty-three thousand two hundred and sixteen carcases were inspected. Retail butchers' shops are also visited.

Slaughter of Animals Act, 1933.—Two prosecutions were taken under this Act and convictions obtained.

Other Foods.—Visits are made to premises where meat products are prepared and also to bakehouses where males are employed.

A NEW GROUP OF FILTERABLE ORGANISMS

Nature of October 10th reports the following "research item": "Sir Patrick Laidlaw and W. J. Elford (*Proc. Roy. Soc.*, B. 120, 292; 1936) have been searching for new organisms in sewage. They removed all visible organisms by filtering the sewage through gradocol membranes with an average pore size between 0·6μ and 1μ. The filtrates contained a new group of organisms which may prove to be a link between the larger bacteria and the pathogenic viruses. The larger forms have a diameter of about 0·5μ, and are visible under dark-ground illumination as small rings. The smallest forms have a diameter of about 0·15μ. The organisms can be grown in a rich broth. If the small forms are filtered off and cultured, large forms develop, so that the same organism probably varies widely in size at different periods of its life history. The organisms appear to be purely saprophytic, because it was impossible to produce any obvious disease when cultures were administered in various ways to rats, mice and rabbits. Several closely related strains were distinguished immunologically in material from different sources."

N.V.M.A. Divisional Reports

LINCOLNSHIRE AND DISTRICT V.M.A.*

MEETING AT LINCOLN

A meeting of the above Association was held at the Albion Hotel, Lincoln, on Thursday, October 8th, 1936. The President, R. Swaby, Esq., was in the Chair and there were also present Messrs. W. W. Lang, E. Porter Smith, A. J. Hines, G. Eaton, A. Logan and W. Gibson (Hon. Secretary).

The minutes of the last meeting, having been published in the *Record*, were taken as read and signed as correct.

Obituary.—The PRESIDENT spoke with regret of the deaths of Professor Macqueen, an Honorary Associate of the Society, and Captain K. J. S. Dowland, a past President of the Society. All present stood for a moment in silence as a tribute of respect and regret.

Correspondence.—(1) From Sir F. T. G. Hobday, Messrs. F. L. Gooch, W. K. Townson, C. W. Townsend, G. Gibson, T. J. Keall, A. N. Foster, R. Hudson, G. Lockwood and T. B. Bindloss, apologising for their inability to attend the meeting.

(2) From the Secretary of the N.V.M.A., thanking members for their help at the Scarborough Congress.

Rules of Association.—It was proposed by Mr. LANG and seconded by Mr. G. EATON, that the revised rules be adopted and that copies be printed and sent to all members.

Report.—A report from Mr. F. L. GOOCH, delegate to the Royal Sanitary Institute Congress, was read by the President owing to the absence of Mr. Gooch. A cordial vote of thanks was passed to Mr. Gooch for attending the Congress and for his interesting report.

Clinical Matters.—Mr. LANG reported an interesting experiment in the treatment of navicular disease. [Mr. Lang's report is transferred to the Clinical Section of this issue.—*Editor.*]

Mr. Lang then showed what he considered the ideal stomach tube for a foal. It is known as $\frac{1}{4}$ in. × $\frac{1}{8}$ in. wall red I.-R. tubing and is procurable in 10 ft. lengths from Messrs. Currie, Thomson & Co., 46, Jamaica Street, Glasgow, 5s. post free.

A polypus, the size of a pigeon's egg, was shown by the PRESIDENT, who observed that he had removed it under a general anaesthetic from the roof of the pharynx of a Shire gelding that had been an intermittent roarer. All present took part in a very helpful informal discussion on a variety of subjects of clinical interest.

*Received for publication October 13th, 1936.

At the conclusion of the meeting the company took tea at the kind invitation of the President, who was cordially thanked for his hospitality.

Wm. Gibson, *Hon. Secretary.*

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SUSSEX VETERINARY SOCIETY*

MEETING AT BRIGHTON

A meeting of the Sussex Veterinary Society was held at the Old Ship Hotel, Brighton, on Friday, October 9th, 1936, when the following members were present: The President (Mr. J. W. Pritchard) in the chair, Messrs. A. J. Alexander, L. S. Balls, T. Bolton, A. D. Campbell, E. Clark, C. Crompton, J. B. Dier, H. Scott Dunn, J. I. Edgar, E. W. Garry, L. Jordan (Hon. Secretary), F. Marks, R. Renfrew, S. Smith, Miss M. L. Somervail, Mr. H. Taylor, Miss D. Williams and Mr. P. Vincent. The following attended as visitors: Messrs. N. S. Barron, Captain R. E. C. Bullen, Captain J. Fox, Messrs. H. Gooch, J. B. Griffiths, G. H. Mills and Miss V. Hickman.

The minutes of the last meeting, having been printed and published in the *Veterinary Record*, were taken as read and were confirmed and signed by the Chairman.

Correspondence.—(1) From Messrs. W. P. Blount, H. W. Steele Bodger, L. J. Kelly, C. J. R. Lawrence, C. H. Spurgeon, F. B. O. Taylor, W. K. Townson, F. W. Willett and Captain E. H. Wyly, regretting their inability to attend the meeting.

(2) From the Secretary of the National Veterinary Medical Association, stating that the Council of that body had decided to recognise the Society as a Division of the Association and asking if the Society would care to subscribe for the provision of a link in the Presidential Chain. It was resolved, on the proposition of the President, seconded by Mr. Scott Dunn, that the sum of £2 be subscribed for the provision of a link in the Presidential Chain of the National Veterinary Medical Association.

(3) From the Secretary of the National Veterinary Medical Association stating that the Annual Congress of the Association for 1937 was to be held in Bournemouth and asking the Society to nominate two members to serve on the Provisional Committee for the Congress.

It was resolved that the President and Hon. Secretary be appointed as the delegates of the Society on such committee.

(4) From Mr. E. R. Greenwood, stating that in view of the fact that he had secured a position in Leicestershire and was therefore unable to attend meetings, he wished to tender his resignation. Mr. Greenwood's resignation was accepted with regret.

Elections.—The following, having been duly nominated, were elected members of the Society: Captain W. K. Townson, Mr. F. W. Willett and Mr. E. C. Winter.

Nominations.—The following were nominated as members of the Society: Major W. Hamilton Kirk, Mr. Arnold Spicer, Mr. R. J. Stow, Professor J. B. Buxton, Captain J. Fox and Mr. H. Gooch.

Papers.—Papers entitled "Sunday Morning to Saturday Night" were given by Miss M. L. Somervail and Miss D. Williams.

A lengthy and detailed discussion on the two papers followed, in which the following took part: Messrs. A. D. Campbell, S. Smith, L. Jordan, H. Scott Dunn, J. W. Pritchard, R. E. C. Bullen, L. S. Balls, H. Taylor and J. B. Dier. Subjects which aroused special interest were haematomata of the ears, mammary tumours, and the use of chloroform with cats.

Votes of Thanks.—On the proposition of Mr. Scott Dunn a hearty vote of thanks and congratulation was passed to the two ladies for giving these papers. A vote of thanks to the President terminated the proceedings.

Prior to the meeting a large number of members and ladies were present at an informal luncheon, and at the conclusion the whole company adjourned for tea.

L. Jordan, *Hon. Secretary.*

*Received for publication October 15th, 1936.

SCOTTISH ATTESTED HERDS

Thirty-nine Scottish herds have been added to the register in connection with the Tuberculosis (Attested Herds) Scheme since August 31st, bringing the total number up to 182. The Ayrshire breed of cattle predominated, there being only two cases in which the herds comprise Ayrshire and Galloway and Ayrshire and Red Poll cattle respectively.

The owners who have received certificates include the Duchess of Montrose, who has a herd of 45 Ayrshires and Red Polls at the Home Farm, Brodick; and Lord Carnegie, who has 90 Ayrshires at Elsick Home Farm, Newtonhill, Kincardineshire. There are two herds in Angus comprising 285 animals. The County of Ayr furnishes 26 herds, with a total of 1,879 animals; Dumfriesshire has four herds, comprising 346 animals, Lanarkshire two herds with 207 animals; and the counties of Bute, Dumbarton, Kincardine, Renfrew, and Wigtown have one herd each. The herd of Mr. C. M. Bain, Corra, Castle Douglas, Kirkcudbright, has been transferred to Suffolk.

The number of herds attested to date is 182, comprising 14,793 animals. The following table gives the location of the herds in counties:—

Aberdeen	1	Kirkcudbright	11
Angus	2	Lanark	12
Argyll	1	Midlothian	4
Ayr	117	Peebles	1
Berwick	1	Perth	1
Bute	1	Renfrew	5
Dumfries	15	West Lothian	1
Dumbarton	4	Wigtown	4
Kincardine	1		
			182

In Parliament

The following questions and answers have been recorded in the House of Commons recently:—

Poultry Diseases

Mr. Hardie asked the Secretary of State for Scotland what diseases are affecting the poultry in Scotland; and whether the general standard at poultry farms is considered satisfactory by the Department in charge of this service?

Mr. Wedderburn: The most serious diseases at present affecting poultry stocks in Scotland are fowl paralysis and coccidiosis. Intestinal parasites, diseases of the reproductive system, bacillary white diarrhoea, fowl-pox and tuberculosis are the other chief sources of loss. The general standard of health at poultry farms throughout the country cannot be regarded as satisfactory, but research is actively in progress at different centres in the United Kingdom on the problem of controlling these diseases.

Mr. Hardie: Is it not the case that a serious situation has arisen in regard to poultry-keeping in Scotland, and what has the hon. Gentleman's Department been doing to find out what is the cause of these diseases? Has it not been stated that they are due to the increase in the demands made on the hens to lay more and more eggs—

Mr. Maxton: Sweated.

Mr. Hardie: Yes; or is it merely a transfer of the mental condition of the Government to the poultry of Scotland?

Mr. Wedderburn: The hon. Gentleman must remember that hens will be hens.

. . . . .

Pasteurised Milk

Sir Arnold Wilson asked the Minister of Health whether his attention has been called to the statement in the report of the medical officer of health of Bootle that, of 13 samples of pasteurised milk taken from two licensed plants of modern design erected in the previous year, only eight conformed to official standards, and of 21 samples of school milk only 15 came up to standard; and whether, in view of the proved inefficiency of many modern pasteurising plants, as shown by the official report of Sir W. Dalrymple-Champneys, and of similar reports from other county boroughs, he will initiate fresh scientific inquiries into this matter?

Mr. R. S. Hudson: My right hon. Friend is aware of the statement in the annual report of the medical officer of health for Bootle. My Department in May, 1935, circulated to local authorities a detailed memorandum on the requirements for ensuring the efficient working of pasteurisation plants, and on April 24th last, in a circular letter, my right hon. Friend again drew their attention to the matter. He then suggested that they should survey all licensed plants in their areas and cause frequent inspections to be adopted in future. My right hon. Friend does not consider that any fresh scientific inquiry is at present required on this subject, but rather continuous activity on the part of the licensing authorities in supervising the operation of pasteurisation plants.

Mr. Macquisten: Is the hon. Gentleman not aware that pasteurised milk is simply half-boiled milk and that anybody who has a gas-ring can pasteurise milk; and is this not simply an attempt on the part of big corporations to take a "rake off" the food supplies of the people?

Brigadier-General Clifton Brown: Has the hon. Gentleman seen the report of the Reading Agricultural College that a disturbingly high proportion of samples taken are contaminated?

Mr. Hudson: That appears to emphasise the need for local authorities to follow the advice of the Ministry and to exercise strict supervision over the pasteurising plants in their areas.

Mr. A. V. Alexander: Is the Parliamentary Secretary aware that owing to the use of unpasteurised milk at Bournemouth, there were 500 cases of typhoid and 40 deaths?

Mr. Macquisten: Could not pasteurised milk have that effect just as much as non-pasteurised milk?

. . . . .

Feeding Stuffs (Herring Meal)

Sir Arthur Michael Samuel asked the Minister of Agriculture whether his Department has records of the results of the use of dried herring meal mixed with clover fodder as concentrated food for dairy herds, so far as the use relates to volume of milk and to its quality and flavour for cheese-making; and whether he is recommending the use of this form of dried fodder?

The Minister of Agriculture (Mr. W. S. Morrison): No information appears to be available concerning the production or use in this country of a feeding meal of the nature mentioned in the question. I am, however, aware of the steps which have been taken in regard to this meal, but it is too early at present to give any answer to the detailed points raised by my hon. Friend.

Sir A. M. Samuel: Is the Herring Board taking steps to see what can be done to make dry-fodder use of a surplus or glut of herrings, or of immature herrings?

Mr. Morrison: Yes, Sir; a number of trials with regard to feeding stuffs of this character are now being inaugurated by the Ministry of Agriculture and the Herring Board.

Mr. George Griffiths: Is it not a fact that this makes the milk very fishy?

£50,000 BEQUEST FOR PASTORAL RESEARCH

Pastoralists throughout New South Wales will benefit directly and indirectly from a bequest of £50,000 in the will of Arthur Sydney Burdekin, grazier, of Dunkeld. In his will, after appointing the Perpetual Trustee Co., Ltd., his executors and trustees, and leaving certain bequests, Mr. Burdekin directed that the residue be sold and proceeds invested, so as to accumulate at compound interest for 21 years after his death, or until the trust fund totalled £50,000.

He then instructed his trustees to apply in perpetuity the annual income from the £50,000 to scientific research in relation to the pastoral industry in New South Wales, and particularly in respect of diseases in sheep, horses and cattle.

The will directed that the annual income be paid to the Graziers' Association of New South Wales to be applied for the purposes specified in such manner as the executive committee of the Association, at their absolute discretion, should determine.

Should the Graziers' Association cease to exist in the next 21 years, or not be in existence when the trust fund totalled £50,000, or his trustees be satisfied that the bequest was not being applied in a *bona fide* manner, they have power under the will to appoint an honorary committee of three persons to apply the money for the purposes specified.

The general secretary of the Graziers' Association said that the gift was a magnificent recognition by Mr. Burdekin of the vast opportunities in the field of scientific research into stock diseases.

Notes and News

The Editor will be glad to receive items of professional interest for inclusion in these columns.

Diary of Events

Nov. 30th.—All changes of addresses to be sent to the Registrar, R.C.V.S., for inclusion in 1937 Register.

Dec. 3rd.—Meeting of the Central Division, N.V.M.A., at the Conway Hall, Red Lion Square, W.C.1, 6.30 p.m.

Dec. 3rd.—R.C.V.S. Written Examinations.

Dec. 5th.—Meeting of the North of England Division, N.V.M.A., at Newcastle-on-Tyne, 2.15 p.m.

Dec. 7th.—Meeting of the Editorial Committee, N.V.M.A., at 2, Verulam Buildings, Gray's Inn, W.C.1, 10.45 a.m.

Dec. 7th.—Meeting of the Finance and General Purposes Committee, N.V.M.A., at 2, Verulam Buildings, Gray's Inn, W.C.1, 2 p.m.

Dec. 7th.—R.C.V.S. Oral Examinations commence in Dublin.

Dec. 11th.—Meeting of the Southern Counties Division, N.V.M.A., at Southampton, 2.30 p.m.

1937

Jan. 8th.—R.C.V.S. Council Meetings.

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PERSONAL

Birth.—Cartland.—On November 16th, 1936, at 29, Cleveland Gardens, W.2, to Winifred, wife of Bryan Cartland, M.R.C.V.S., a daughter.

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Will.—Crofts, Mr. Albert, of Bedford, veterinary surgeon (net personalty, £12,887), £14,226.

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R.C.V.S. OBITUARY

Pack, Charles, "Ray Mead," Avenue Road, Lymington, Hants. Graduated London, March 28th, 1882; died November 19th, 1936.

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PROFESSORSHIP OF ANIMAL PATHOLOGY, UNIVERSITY OF CAMBRIDGE

On Tuesday last official notice was given by the Vice-Chancellor of Cambridge University, Mr. G. H. A. Wilson, M.A., Master of Clare College, that the Professorship of Animal Pathology is vacant by the resignation of Professor J. B. Buxton, M.A., Queens' College, and a meeting of the electors to the Professorship will be held on Tuesday, January 19th. Candidates should communicate with the Vice-Chancellor before January 12th.

RESEARCH ON GRASS DISEASE IN HORSES

Agricultural Research Council's Review of the Work of the Animal Diseases Research Association

In a recently-issued statement regarding the above, the Agricultural Research Council observes: "In view of the losses which have been caused by grass sickness in horses and the natural anxiety which has arisen with regard to this disease, the following brief review of the position as it presents itself to the Agricultural Research Council may be of interest. Close touch has been maintained by the Agricultural Research Council with the scientific work of the staff of the Animal Diseases Research Association, whose headquarters are at the Moredun Institute, Gilmerton, Midlothian, and in the first Report of the Council for the period July, 1931-September 30th, 1933, the favourable impression which the Council had formed of the researches undertaken by the staff of the Association was recorded. In their second Report, which has just been issued, no direct reference is made to the prolonged and difficult investigations on grass sickness which for some years past have been conducted by the Animal Diseases Research Association, both in the laboratory and in the field. During the period covered by the Report grass sickness had not been exceptionally prevalent. Since the end of the period, however, a devastating outbreak of the disease has occurred, which is said to have caused the death of 1,500 horses in Scotland alone. At the request of the Department of Agriculture for Scotland the Council's Animal Diseases and Nutrition Committees have therefore recently examined the progress made by the staff of the Animal Diseases Research Association in their investigations into grass sickness, and have had the advantage of hearing a full account of the work and of the future programme from Dr. J. Russell Greig, the director, and Dr. W. S. Gordon, the bacteriologist.

"The Agricultural Research Council are satisfied that no possible clue to the cause and ultimate prevention of the disease has been neglected; that the investigations have been well conceived and ably pursued; and that, in consultation with the Research Committee of the Animal Diseases Research Association and latterly with the Scottish Board of Research in Veterinary Science, every opportunity has been seized of seeking the advice of specialists who might assist in the unravelling of the cause of this baffling disease. While no cure for the disease has yet been discovered, this has not been due to lack of funds or of research workers so much as to the inherent difficulty of the problem. Hopeful advances in knowledge have been made, and the Council are convinced that the programme of research now adopted, including large scale immunisation experiments, is wisely planned and should be vigorously pursued.

"The Council have appointed a small Sub-Committee of their Animal Diseases and Nutrition Committees which will maintain contact with the workers at Moredun and keep the Council informed of the progress of the researches. The Council have also recommended that a contingencies fund should be made available, so that those at the Moredun Institute engaged in the grass sickness investigations may know that if a special need arises, it can be met immediately."

FOOT-AND-MOUTH DISEASE

Outbreaks of foot-and-mouth disease were confirmed, on Saturday and Monday respectively, among cattle at Idless, Truro, Cornwall, and at Bosley, Macclesfield, Cheshire. In the latter instance the area subject to restrictions in the movement of animals lies in the counties of Chester, Stafford and Derby, and the order represents an extension of that previously in force in connection with an earlier outbreak, the restrictions under which were to have been raised on the 22nd.

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LEGAL NOTES

Obstruction of Veterinary Officers.—A dairy farmer's obstinacy in this matter led to his appearance at Wrexham County Police Court on November 16th and to the imposition of penalties.

Defendant was John Arthur Guest, of Glascoed Hall, near Wrexham, summoned by the Denbighshire County Council for twice obstructing a veterinary inspector in the execution of his powers under the Milk and Dairies Order, and for failing to give reasonable assistance to the inspector.

Mr. William Jones, clerk to the County Council, for the prosecution, said this was, fortunately, a very rare case of its kind. The Milk and Dairies Order, 1926, authorised such inspection of cattle, and one of its objects was to avoid the sale of milk from cattle suffering from tuberculosis. Mr. John Cane, veterinary inspector, called at the farm in October last year, found defendant milking, and went away because there was apparently no intention to give him any facilities.

Last June, Mr. Cane telephoned to Glascoed that he would be calling the next morning, June 3rd, and did so. Defendant refused to allow any examination. Next day the chief veterinary inspector, Mr. Wynne, visited the farm and was similarly refused.

When a sanitary inspector of Wrexham Rural District Council sent defendant a form in connection with the selling of milk defendant returned it with replies such as:—

"Number of cows kept?" "Any number."

"Quantity of milk produced?" "As much as possible."

Mr. Jones added that he rang up defendant, who asked for time to consider his reply. As no reply was received after a considerable time, he (Mr. Jones) wrote to him at intervals, but got no acknowledgment, and the County Council had no alternative but to take proceedings.

Mr. J. H. Wynne, F.R.C.V.S., stated that defendant told him: "This is private property and you've no right to be here unless I ask you to come." Defendant took the attitude that, as there was no system of examination in Flintshire where he had previously lived, the Denbighshire authorities had no compulsion in the matter.

Mr. Ousley Smith, Chester, for the defence, agreeing to substitute a plea of guilty in reference to two of the charges, it was agreed to withdraw a third summons.

In imposing a fine of £5 in one case and £1 in the other, together with fees amounting to £7 7s., the Chairman, Mr. H. P. Harris, said the Bench thought the County Council had been most patient in dealing with the defendant.

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GENERAL MEDICAL COUNCIL: ORIGIN OF STUDENTS' REGISTRATION

Sir Norman Walker, the President, in the course of his address on the occasion of the opening of the 144th session of the General Medical Council, on Tuesday last, offered congratulations to Sir Henry Dale, a member of the council, on the Nobel Prize which had been awarded him. He said that the subject of medical education would occupy a good deal of the consideration of the council at this and subsequent sessions.

The President quoted at length from an account by the late Sir Donald MacAlister on the origin and development of the medical students' register. The Royal Commissioners of 1882 had thought that the preliminary education and registration of medical students should be made a matter of statute, but the provisions for giving effect to their views on this point had not been embodied in the Medical Act. Their recommendations described a system that had already grown up, and the key words seemed, in Sir Donald MacAlister's opinion, to be "courses of study" and "ages." To ensure a minimum age at qualification and a minimum period of study it was necessary to mark the beginning of the course and the age of the candidate when he embarked on it. For this purpose the council kept a central students' register of its own.

There then arose the question of what qualification a student must show before he could have his name entered on the register, so that the General Medical Council had been compelled to define a preliminary education and to embark on inquiries concerning general as well as professional education. Thus, without its seeking, the council had had to exert an influence on general education. The time of two standing committees was now largely taken up with this subject, and the council's requirements had risen, were rising, and were bound to rise higher still.

In the course of the proceedings Sir Norman Walker was re-elected President of the council for the period ending November, 1939.

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PARLIAMENT AND THE BRITISH LIVESTOCK INDUSTRY

Mr. W. S. Morrison, the Minister of Agriculture, attended Tuesday night's meeting of the Conservative Party Agricultural Committee and spoke on the Government's plans for dealing with the future of the British livestock industry. The Government still hope that it will be possible to present the necessary legislation to the House of Commons before the end of the year, but an earlier opportunity has now arisen for a Parliamentary discussion. Mr. Herbert Williams, who won the first place in the ballot for private members' motions for Wednesday of next week, has handed in the following motion:—

"That this House urges the Government to take immediate and effective measures in relation to the livestock industry in order to restore that balance in agriculture which is essential if it is to make its full contribution to the nation's food supply in time of peace and war, and to assure a better standard of life to all engaged in the industry."

On behalf of the Liberal section of the opposition, Mr. Acland and Mr. Wilfred Roberts have handed in an amendment which proposes to add the words, "and hopes that the Government's policy will be based upon an improvement in the quality of the products of the industry, a reduction in the costs of production and distribution, and a stimulation of demand."

BRITISH FUR BREEDERS

The British Fur Breeders' Association held its sixth annual championship show at the Zoological Gardens, London, on Wednesday and Thursday of this week. Founded originally to encourage the breeding of fur-bearing animals other than silver fox, which comes under a separate organisation, by smallholders or men with little capital, the industry has grown steadily. This year's show, the second held in the Zoological Gardens, marked an advance on that of last year, and 14 trophies and cups were offered as against twelve previously. Chief among them were a perpetual challenge trophy presented by the Zoological Society of London for the best fur bearer in the show, irrespective of class, and a similar trophy presented by the Society for the Preservation of Empire Fauna for the best fur bearer of the opposite sex to the champion. In addition there were two special awards for novices.

The entries, nearly 200 in number, were staged in one of the Zoo refreshment houses and a marquee pitched outside. There were classes for blue fox, Jap fox, mink, nutria, and fitch, and the exhibitors came from all parts of the country. All the animals were British born and bred, and fully 60 to 70 per cent. of them were mink. There is a steady demand for their skins, and they are hardy and reasonably easily bred. They cost at present £40 a trio, as against £90 a pair for fox, £20 a trio for nutria, and £7 10s. a trio for fitch, the technical name for polecat. Fur farming has steadily increased of late, a fact which the show clearly illustrates. Nor is its association with the Zoo a casual one, for officials of the association and breeders are the first to admit that they owe much to the knowledge and work of the Zoological Society in the care and breeding of animals.

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ARMY VETERINARY SERVICE

LONDON GAZETTE—WAR OFFICE—TERRITORIAL ARMY

Nov. 24th.—Capt. R. E. C. Bullen, from Active List, to be Capt. (Nov. 25th).

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GLASGOW VETERINARY COLLEGE PRIZE DISTRIBUTION

Mr. Alexander Murdoch, chairman of the governors, speaking on the occasion of the distribution of prizes which took place at the Glasgow Veterinary College on Thursday of last week, said that the Secretary of State for Scotland and the Minister of Agriculture had appointed a committee to review the facilities available for veterinary education in Great Britain in relation to the probable future demand for qualified veterinary surgeons. The committee was asked particularly to make recommendations for public maintenance grants to veterinary institutions from 1937 to 1942.

He recalled the withdrawal of the State grant in 1925, and how the College had been able to keep going by the financial support of friends, public and private, by the loyalty of the teaching staff, and by the success of the students. "I am quite sure," he said, "that the governors will welcome a grant, always provided that a certain latitude is allowed in spending it as the governors may think fit, particularly in the direction of increasing the emoluments of the teaching staff, who, I am sorry to say, are paid on a scale which we recognise is by no means adequate, but which at present we are powerless to improve."

He would state, as on former occasions, that the governors would welcome a capital grant for the purpose of carrying out further structural and necessary alterations to accommodate the increased number of students.

The students this year totalled 284, of whom 17 were women. During the past session 19 students qualified, and these, together with all other graduates of the College, had, so far as was known, found permanent or temporary employment.

Mr. Murdoch expressed the thanks of the governors to everyone who had given financial support during the past year.

Mr. P. R. Laird, Secretary to the Department of Agriculture for Scotland, said he wished to make it clear that it was no fault of the Department that the grant had been withdrawn. That was the result of the recommendation of a very eminent committee presided over by a Lord of the Court of Session. It was true a committee had been set up and its remit had been made wide enough to review the Glasgow College position.

Dr. Alexander Whitehouse, principal of the College, announced that during the Christmas vacation they were spending about £2,000 in order to have a bigger assembly and examination room, together with a laboratory and theatre.

The prizes were presented by Mr. J. P. Ross Taylor, Duns, the chairman of the Highland and Agricultural Society, who said that there was great scope for qualified students in the realms of research and general veterinary practice.

The prize winners included:—

FIVE-YEAR COURSE.—First year, medals in chemistry and biology, Edward C. Straiton.

Second year, medal in junior anatomy, Jas. L. Shaw. Medal in histology, A. V. Farrell. Medal in physiology, Miss O. D. James. Medal in animal management, R. R. Macrae.

Third year, medals in senior anatomy and pharmacology, Chas. M'Nulty. Medal in hygiene, W. A. Whiteford.

Fourth year, medals in pathology and parasitology, D. J. Macaulay.

FOUR-YEAR COURSE.—Medal in veterinary medicine, H. B. Turkington. Medal in veterinary surgery, James Geddes.

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VETERINARY UNIT IN ABYSSINIA

The experiences of members of the Silver Star Veterinary Unit, which was sent to Addis Ababa during the Italo-Abyssinian war by the Royal Society for the Prevention of Cruelty to Animals, were described by Colonel Robert J. Stordy, *C.B.E., D.S.O.*, M.R.C.V.S., officer in charge of the unit, when he gave a lantern lecture in the Royal (Dick) Veterinary College, Edinburgh, on the evening of Monday, November 16th. The unit left London in February of this year with the intention of establishing a field veterinary hospital for 250 animals, and arrived in Addis Ababa early in March.

Describing the difficulties which were met with, Colonel Stordy said that the help such a society as the R.S.P.C.A. could afford was needed in Abyssinia, but it would be no easy task—due to the inherent callousness of the natives to suffering. Education, strengthened with persuasive punishment, would be required to illustrate to the natives the moral obligation due to the animals in their care.

In Abyssinia, where the horse had been known from time immemorial, the absence of the most rudimentary principles of animal management was remarkable. There was no legislation to support interference, and no animal could be destroyed without the owner's consent.

Among cattle, anthrax was prevalent in many districts, and native flocks of sheep suffered from scabies, although conditions in the highlands indicated that sheep-breeding could form a profitable branch of farming.

Shortly after the unit's arrival in Addis Ababa a veterinary hospital in a compound in the city was established and work was begun, principally among native ponies.

After the capture of Dessie by the Italians the unit had to transfer its equipment to the British Legation, where the work was carried on, chiefly among riding and pack mules brought from Dessie. The unit also gave assistance in establishing a refugee camp, and left Addis Ababa for London a fortnight after the Italians had entered the capital on May 5th.

Colonel Stordy said that he hoped that when conditions were more settled in Abyssinia the R.S.P.C.A. would be given an opportunity of continuing the services begun by the Silver Star Unit.

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HERD EXAMINATION IN EAST SUSSEX

At a recent meeting of the Agricultural Committee of the East Sussex County Council it was reported that there had been a very great increase in the work of the veterinary staff, especially in connection with the "accredited" milk scheme, and that the present staff was only able to carry out the duties under the Diseases of Animals Act, and to examine the herds of "accredited" producers.

The result was that the majority of the herds in the county received no inspection at all, and in consequence of the experience gained in the examination of the "accredited" herds, it was the opinion of the committee that all herds in the county should be examined at regular intervals. For that purpose the committee had decided to appoint two additional whole-time veterinary inspectors. The staff would then consist of a chief veterinary inspector and four assistants who should be able to examine all herds in the county at least twice a year.

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PROTECTION AGAINST GAS: AIR RAID PRECAUTIONS

Public authorities and private individuals are taking precautions against the possibility of enemy gas attacks from the air, and some of the methods of protection have been demonstrated recently.

At the Public Health Congress in London last week, for instance, there were demonstrations of the use of motor vehicles specially equipped for ridding the air and ground of lingering gas. One particularly thorough display was given after a discussion on air raid precautions as they affect the departments of the municipal and county engineer and cleansing superintendent. Those attending the conference saw motor vehicles, similar in shape to the old water carts, but having spraying apparatus which will cleanse the air and cause gas to fall on the ground, where it can be rendered innocuous even when it lurks in crevices.

British Air Raid Shelters, Limited, are offering their services, especially to ensure protection for horses, cattle, dogs, or other animals. They are designing bomb-proof shelters, in which whole families and staffs might be accommodated during times of danger, containing reserve supplies of water, electricity and conditioned air, and storage for sufficient necessities to sustain life during a relatively prolonged siege. Hundreds of tons of concrete are required for such shelters, and some are already being made in certain suburbs of London.

The shelters for animals are chiefly designed to withstand gas attacks, and to protect supplies of fodder, which might be contaminated.

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NATIONAL PONY SOCIETY

Mr. Herbert Bright (President) occupied the Chair at the last Council meeting of the National Pony Society, and intimated that the next Pony Show would be held at the Royal Agricultural Hall on Friday and Saturday, March 12th and 13th, 1937.

The schedule of classes was passed for issue, comprising 56 classes; it will include sections for all types and ages of polo ponies, Shetland and Welsh ponies, children's riding and equitation classes, Arab horse classes, and four classes for mountain and moorland ponies (to be ridden). It was announced that Mr. L. St. Bel Golledge, M.R.C.V.S., of Sherborne, would act as Veterinary Inspector, and Mr. R. C. Irving, F.R.C.V.S., as Hon. Official Measurer.

Vol. 22 of the Stud Book is now in the course of preparation, and will be issued to members at the end of the year. Various photographs of champion ponies to illustrate this volume have been selected by the Editing Committee, who had pleasure in reporting that an excellent entry of 700 ponies had been received, this being an increase of 116 over the last volume. The supplement of young polo ponies will be issued at the same time, indicating an entry of 53, an increase of ten over last year's supplement.

It was decided that the Society should interest itself in the formation of an association for the showing of children's ponies. Major H. Faudel Phillips was appointed by the Council to preside over a meeting to be held at Messrs. Tattersalls (Subscription room) on Wednesday, December 16th, at 2.15 p.m. at which all interested are invited to attend.

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"LEST WE FORGET"

After the publication of the "Volunteer Veterinary Services of the Empire and the Second Anglo-Boer War (1899-1902)" (*Vet. Rec.* August 26th, 1933), several letters were received regarding graves of veterinarians in South Africa. Among these was an enquiry concerning that of Major Alexander Edward Richardson, A.V.D., who had died in the Orange Free State.

Application was made to the Provincial Secretary, Bloemfontein, but no information could be given regarding the missing grave. Fortunately, however, the matter was referred to Mr. N. F. Viljoen, M.R.C.V.S., Superintendent of the Abattoir at Bloemfontein. His reply, dated October 8th, 1936, states: "Richardson's grave is in the old Bayswater Military Cemetery, in Bayswater, suburb of this town." He adds that few (if any) of the troops there were killed in the Anglo-Boer War, but the majority died of disease between 1902-1914 when the Imperial Garrison left South Africa. Richardson's grave (of which Mr. Viljoen has kindly provided a photo) "is the second on the right from the main entrance."

Mr. Viljoen concludes by stating that thousands of British troops are buried in the Bloemfontein cemeteries, particularly Monument Hill, but in Bayswater there are only about 100 graves all told, including those of soldiers' wives and children.

Richardson graduated at London in 1885 and, as the gravestone indicates, died at Bloemfontein on January 25th, 1905.

The thanks of the profession, particularly of the Royal Army Veterinary Corps, are due to our Bloemfontein colleague who has furnished these details. H. H. C.

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THE LATE PROFESSOR PASCHEN

Dr. Enrique Paschen, sometime director of the Imfanstalt at Hamburg, died on October 22nd. "His life-work" states *The Lancet*, "was the study of smallpox and vaccinia, and his long tenure of the directorship of the vaccine station, from which he retired only a few years ago, gave him abundant opportunity and material on which to base those authoritative and beautifully illustrated descriptive studies of the pock diseases which adorn many a well-known compendium."

Mentioning the recent death of Professor Paschen's contemporary, Amédée Borrel, at Strasbourg, *The Lancet* writes: "Virus workers all over the world have now to mourn the passing of the two pioneers whose names will always be associated with the demonstration of elementary bodies in the lesions of the pock diseases (fowl-pox, Borrel, 1904; vaccinia and small-pox, Paschen, 1906 and 1908). These observations, accompanied as they were by the expressed belief that the bodies in question constituted the veritable *causae causantes* of the diseases with which they were associated, had long to wait for general acceptation, and, it is only within the last six years that renewed attention to them, in the course of the recent great revival of virus studies, has yielded the long looked-for evidence of their aetiological importance. Their study is even yet, however, in its infancy, but now that serious attention is being given to them after a long period of neglect and old records are being more eagerly scrutinised, it is just possible that a valid claim to have discovered and figured the elementary bodies in a virus lesion, at a time when the isolation of causative and cultivable organisms from virus lesions had not yet been given up as hopeless, may be posthumously awarded to John B. Buist, whose studies on vaccine lymph carried out in the bacteriological laboratory of the University of Edinburgh and published in book form in 1887 contain a remarkably accurate description of the elementary bodies, suspected by the author to represent the spores of micrococci."

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ACCURACY OF BIOLOGICAL ASSAYS

"Methods of biological assay have been a subject of intensive study during the past decade. This work has revealed the existence in animals of individual variation of an extent that was previously unsuspected," states the *British Medical Journal* of October 24th, and continues: "Furthermore, it was found that this variation in most cases was of a skew type. If, for instance, half the mean lethal dose of drug killed 10 per cent. of animals, then 10 per cent. would survive twice the mean dose. The existence of a wide variation distributed in this manner has made it very difficult to estimate the probable accuracy of many forms of biological trial. A sub-committee of the British Pharmacopoeia Commission has now dealt with this intricate problem. It chose the occurrence of an event 99 times out of 100 as being equivalent to a certainty for purposes of assay, and on this basis calculated the limits of certainty of various biological assays proposed for inclusion in the forthcoming *British Pharmacopoeia* addendum. The majority of the methods of bio-assay of antisera show a surprisingly high accuracy. For example, if the assay of gas-gangrene antitoxin (*Vibrion septique*) gives a result of 100, then the true figure will lie between 89 and 111 in 99 cases out of a 100. The biological assays of the vitamins give much less exact results, and in several cases the percentage limits of error are as wide apart as 30 and 300, and in one case these figures are 15 and 650. The results summarised in this report were obtained by the analysis of experiments on very large populations of animals, and called for difficult methematical treatment. The variations revealed as regards the accuracy of the different forms of biological assay are surprising, and a statement of these limits of error will make much clearer the real significance of the results of the various forms of trial."

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EMPIRE CO-OPERATION IN AGRICULTURAL RESEARCH

Nature, in an article which appeared in the issue of November 7th, points out that the term "scientific" applied without qualification to the British Commonwealth Scientific Conference held on September 21st to October 8th is scarcely accurate. "Only a part of the machinery of science was under consideration: that part, especially of the sciences relating to agriculture, which is organised on a co-operative basis between the Governments of the British Commonwealth. The delegates to the Conference were mostly those concerned with the administration of Government scientific departments or of national research organisations; few were persons actively engaged in scientific work themselves.

"Even within these limits, the field covered was a large and interesting one. Scientific co-operation of the kind that the Conference

reviewed began in London, with a group of African colonies that had a common interest in the development of knowledge of insect-borne diseases. The Entomological Research Committee set up by the Colonial Office, in 1909, became a few years later the Imperial Bureau of Entomology, established on a wide basis of Empire co-operation and charged with the documentation of entomological knowledge and the identification of insects injurious to man and to his crops and stock. This was followed in 1920 by the formation of a similar, jointly maintained, central organisation to deal with the fungi and bacteria that injure crops or are otherwise of economic importance—the Imperial Bureau of Mycology. As a result of the Imperial Agricultural Conference of 1927, eight new Imperial Agricultural Bureaux were established to cover the subjects of soil science, animal health, animal nutrition, animal genetics, plant genetics (other than herbage), plant genetics (herbage), fruit production and agricultural parasitology. At the same time the two older Bureaux became Institutes, as they had functions considerably wider than those assigned to the eight new Bureaux, which confine themselves to the collection and dissemination of information. The new Bureaux are attached to research institutes in their subjects at Rothamsted, Weybridge, Aberdeen, Edinburgh, Cambridge, Aberystwyth, East Malling and St. Albans, while the two older bodies are in close contact with the National History Museum, South Kensington, and the Royal Botanic Gardens, Kew, there being no research institutes specially devoted to entomology and mycology in Great Britain.

"The activities of these ten organisations, a survey of which formed a major part of the work of the Conference, has recently been described in considerable detail in the seventh annual report of the Executive Council of Imperial Agricultural Bureaux.* The Council comprises representatives of the United Kingdom, of each of the five Dominions, of India, Southern Rhodesia, and the Colonial Empire. It administers a service of common Empire interest maintained from a fund jointly subscribed by all the members of the British Commonwealth. The acceptance by Governments of the scheme proposed by the 1927 Conference and extended by the Skelton Committee on Economic Consultation and Co-operation which followed the Ottawa Conference a few years later, brought into being a new type of Imperial organisation. A glance at the Council's recent report, which indeed will well repay careful reading, indicates how rapidly the service thus set up has expanded and how clearly it seems in most cases to have met a need.

"The primary function is information. The world literature on the subject with which each Bureau or Institute deals is surveyed and in the main abstracted. The aim in most cases is to miss nothing, no matter where or in what language it sees the light. The *Veterinary Bulletin*, published by the Imperial Bureau of Animal Health at Weybridge, noticed some 3,000 papers in its last annual volume. Early notice and sufficient detail to be of value to the worker who may be unable to secure or read the original paper are the keynotes of the service, the machinery for which has now been brought in most cases to a high level of efficiency. Special reports, in which the whole of the available literature on some particular subject is digested, are a feature of several of the Bureaux; technical communications and bibliographies of others. Translations or long abstracts are provided by some, while several maintain lending libraries available throughout the Empire, and all are prepared to answer inquiries to the best of their ability. The two older Institutes are characterised, in addition, by a considerable organisation for the identification of insects and fungi.

"Visiting parties from the Conference spent much time in examining the work of these ten Bureaux and Institutes, and also in considering the possibilities of extending the organisation to cover other fields, especially those of dairy science and forestry. What conclusions have emerged from the subsequent discussions in plenary session will, no doubt, become known in due course. At least one may hope that the report to Governments will recognise how much easier has been made the path of the research worker in many branches of agricultural science in knowing what has been and is being done in his chosen field, and thus set off, against the danger of superficialism to which such 'crammed' knowledge might lead, the increased efficiency that must come from the early and wide dissemination of the results obtained by other workers. It is a fair claim that in this kind of organisation the British Commonwealth at present leads the world.

"In its touring programme the Conference did not confine itself to these joint enterprises. Several of the agricultural, veterinary and dairying research institutes were visited and also some of those under the Department of Scientific and Industrial Research, and the Imperial Forestry Institute at Oxford. In all cases the inter-Imperial aspects of the work came under notice, but evidently more as a guide to the development of research in the various countries of the Commonwealth, than with a view to the extension of jointly financed research projects. Co-operation in Empire research, as distinct from the documentation of research, is tending more in the direction of interchange of programmes and personnel and the holding of conferences than in centralisation of staffs and joint finance. It cannot be doubted that this is a healthy sign of the vigour of scientific development overseas, but it is equally clear that important research work is waiting on facilities that no single part of the Empire has as yet felt impelled to provide. Exceptionally there has been financial co-operation in research schemes on subjects such as the transport and storage of foodstuffs and locust investigations, centred at institutions in England, and proposals were before the Conference for a joint investigation into the control of termites. Usually, however, the investigational work done at a central station in the special interests of an overseas Government is paid for by an *ad hoc* grant from that Government, and such work is necessarily limited to problems on which some institute in the country is already engaged.

"Considerable as is the field covered by the inter-Imperial organisations now in being, these limitations in their scope are leaving untouched many fundamental investigations that may not be urgent in any single member of the Commonwealth but are of great importance to the whole.

"Another aspect of the Conference that should be mentioned was the emphasis laid on the value of the contacts established through the holding of periodical meetings not only of those

*Imperial Agricultural Bureaux, Seventh Annual Report of the Executive Council, 1935-1936. Pp. 102. (London: H.M. Stationery Office, 1936.) 5s. net.

charged with the direction of research but also of the actual workers in the different fields of applied science. Imperial Conferences are already held in a few subjects at intervals of five years or so, and an extension of this principle seemed to be indicated. Perhaps the greatest value of the Conference just concluded has been the opportunity it gave to members of getting to know the personalities and interests of their 'opposite numbers' in other parts of the Commonwealth and thus to secure a spirit of co-operation that is beyond the reach of official agencies."

Correspondence

Letters to the Editor should reach the Office not later than by the first post on Tuesday morning for insertion in following Saturday's issue.

All correspondence must bear the name and address of the contributor for publication.

The views expressed in letters addressed to the Editor represent the personal view of the writer only and must not be taken as expressing the opinion or having received the approval of the N.V.M.A.

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SHOCK BY ELECTRICITY

To the Editor of the Veterinary Record

Sir,—My friend Mr. Tweed has kindly supplied me with references: most of them I had already, but the others I will see.

In his letter of the 16th inst., Mr. C. R. Golledge unintentionally misquotes me when he asks how the kennel-man "was being shocked from *the* earth"? My phrase was "shocked from earth" which is not quite the same thing. The case of the kennel-man was of the nature of *choc de retour;* some of the current which passed through and/or over me ran along the floor and up his legs.

Most of the remainder of Mr. Golledge's letter is covered by mine of the 15th inst., which was printed by the side of his. Everyone will agree that direct experiments on man would afford much more valuable evidence than the record of my accident, and most people would prefer the current to travel as it did in my case rather than directly through the head, or with the heart directly in its path, but I think anyone who has been tetanised by 240 volts with any port of entry will be sceptical about the efficiency of much lower voltages, even when the path is through the head. Mr. Golledge's misfortune with the Great Dane shows that the dog was helpless until operations could be restarted. It may not show much more than that, except that it is just a further illustration of the fact that momentary contact with 240 volts may not kill outright. Such evidence is not calculated to increase one's confidence in voltages in the region of 70 for it emphasises the time factor, which may be of great importance. My view is that this factor should be regarded with great suspicion unless it can be demonstrated that the animal is anaesthetised from the very start.

Yours faithfully,
S. J. Motton.

Penzance.
November 21st, 1936.

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To the Editor of the Veterinary Record

Sir,—Now that the effect of electric currents upon men and animals appears to be once again interesting your correspondents, the following account of an experience which recently happened to a friend of mine may demonstrate the danger of dogmatising regarding the effects of currents of certain voltages upon human beings.

A young man 32 years of age whilst working at a municipal power station in an Australian township, had occasion to mount a ladder near to three bussbars charged with 6,600 volts of electricity direct from the generators. According to the report of the accident, the young man is believed to have slipped or in some way accidentally touched one of the bars with his foot, setting up a crackling noise and sending a sheet of blue flame upwards. The attention of others in the building had been attracted, and to their horror they saw the young fellow fall face downwards with arms crossed over his head as he neared the bars. There was a terrific crackling noise. Sheets of blue flame swept towards the ceiling and the air was filled with smoke and a sickly burning odour.

A workman gallantly endeavoured to pull the unfortunate man away from the bussbars, but failed, being dazed by the blinding flashes of electricity. Within 20 seconds the current had been switched off; the young man was then lifted from the bars and medical aid summoned.

Ten minutes later, regaining some measure of consciousness, he stated that he was "all right." Later he said he had no recollection of any accident or of even leaving his home on that day.

That happened last August, and the young man is still in hospital in Australia, but recent reports indicate that he will once more be out and about before Christmas! It is hardly necessary to add that he was badly burnt—every hair on his body—whilst grafting operations were necessary for skin growth on certain parts of the body. The remarkable fact is that this young man is still alive, and on the road to recovery. Loss of consciousness appears to have been complete in his case.

Yours faithfully,
D. J. Anthony.

Brierley Hill,
Staffs.
November 23rd, 1936.

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THE HOBDAY PORTRAIT FUND

To the Editor of the Veterinary Record

Sir,—Will you be so good as to allow this, the third and final, list of contributors to the Hobday Portrait Fund to be published in an early issue of the *Veterinary Record.* The total sum received amounts to £139 9s. 0d., and on behalf of the Committee, I would like to reiterate my grateful thanks to all those gentlemen who have so generously made it possible to have Sir Frederick's portrait painted.

The work is now finished and the Committee has only to decide how, where and when the presentation to Sir F. Hobday will take place.

Yours faithfully,
Hamilton Kirk.
(Treasurer, Hobday Portrait Fund.)

"Croyland,"
Finchley Road,
Golders Green, N.W.11.
November 11th, 1936.

Brayley Reynolds	A. E. Gachet
W. Ascott	R. Wall
D. E. Wilkinson	— Mackay
E. C. Winter	R. H. Over
C. Parsons	— Lawson
F. Thornton	— Wright
F. G. Edwards	L. E. Bevan
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